The Ontario Task Force on Employment and New Technology

Labour Market Trends in Ontario 1950-1980

An Appendix to the Final Report

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ONTARIO TASK FORCE ON EMPLOYMENT AND NEW TECHNOLOGY

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LABOUR MARKET TRENDS IN ONTARIO
1950-1980

This Appendix contains a report prepared for the Ontario Task Force on Employment and New Technology. The topic was approved in advance by the Task Force. At the conclusion of the study, the Task Force had the opportunity to review the report but its release does not necessarily imply endorsement of the results by the Task Force or its individual members.

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FOREWORD

The Ontario Task Force on Employment and New Technology, a joint labour-management group, was established in May 1984 "to consider and report on the manpower and employment implications of new technologies as the same may be introduced and applied in Ontario during the next decade and the extent and nature thereof."

To inform its discussions, the Task Force established a research agenda designed to gather information on employment and technological change from a wide variety of sources. The research agenda contained projects which gathered information of a historical nature, and projects with a future orientation which were designed to gather information describing likely occupational and employment implications associated with technological change in the 1985-1995 period.

The Appendices to the Final Report of the Ontario Task Force on Employment and New Technology contain reports of these research projects. A complete list of these Appendices may be found at the rear of this document. This particular Appendix examines recent historical trends in Ontario's labour market over the 1950-1980 period.

Since, as Northrop Frye once observed, "nobody knows an instant of the future, except by analogy with the past", a study of recent historical labour market trends is an essential precursor to any informed examination of potential future changes.

This Appendix, together with the detailed analysis of occupational change for the 1971-1981 period presented in Appendix 2, provides a historical perspective on where we are now, and how we got here.

Dr. Richard L.E. Brown, P. Eng.
Research Director

ACKNOWLEDGEMENTS

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The Board of Industrial Leadership and Development (BILD)
of the Government of Ontario;
The Ontario Manpower Commission; and
The Ontario Ministry of Labour.

The valuable contribution made by Dr. Hildegard Martens, the author of this report, is particularly acknowledged, as well as the research assistance provided by Ms. Jane Rhodes.

HIGHLIGHTS

Data presented in this report clearly identify a number of important trends apparent in Ontario's labour market over recent years. These are:

- The increasing size but decreasing rate of growth of the total Ontario labour force;
- The rapidly growing share of the baby-boom generation aged 25-44 in the labour force and the beginning of a trend towards an older labour force;
- The increasing participation rates of females in the labour force, the increasing numbers of females in the labour force, and the increasing share of the labour force occupied by females;
- The increasing level of educational attainment of the labour force;
- The decreasing proportion of the labour force employed in goods-producing industries, and the increasing proportion of the labour force employed in service-related industries;
- The faster rate of growth of employment in service-related industries;
- The growth of employment in managerial, professional, clerical, service and sales occupations, particularly in service-related industries;
- The steady increase in the extent of part-time work, particularly in the service industries, most of it performed by women;
- The increased unemployment rates for all labour force participants;
- The continuing high unemployment rates of youth in spite of rising educational attainment.

The identification of these trends has provided a background of information for assessing movements of aggregate employment levels, occupational and industrial employment distributions, and other labour market developments in a context in which technological change has operated as an important variable. In addition, the report has assisted in highlighting those industries, occupations, and segments of the Ontario labour force which may be significantly affected by the future introduction and diffusion of technology in the workplace, and therefore has assisted in the orientation of future research activities directed at an examination of the extent and nature of the manpower and employment implications of new technologies in Ontario.

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1.0 INTRODUCTION

Over the past several decades, a variety of demographic, social, technological and economic forces have shaped Ontario's labour market. Technological change in the workplace, together with other forces, has affected the organization of work and the overall structure of the labour market.

This report identifies major demographic and labour market trends which have developed over the past thirty years in Ontario.

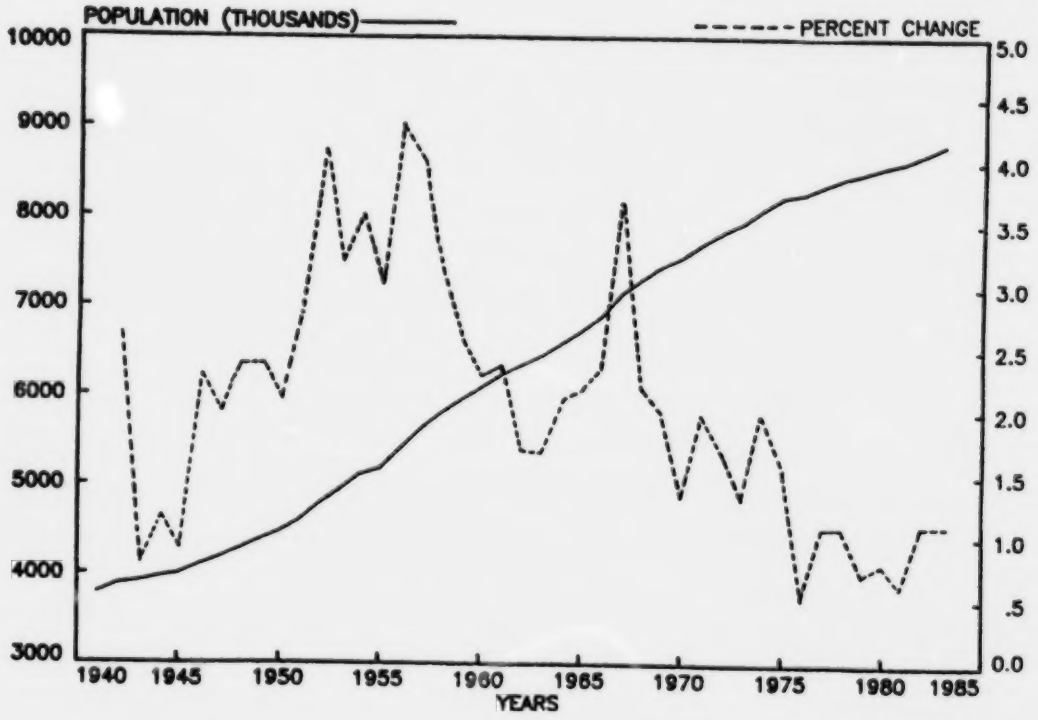
The identification provides a background of information for assessing movements of aggregate employment levels, occupational and industrial employment distributions, and other labour market developments in a context in which technological change has operated as an important variable . In addition, the report will assist in highlighting those industries, occupations, and segments of the Ontario labour force which may be significantly affected by the future introduction and diffusion of technology in the workplace, and will therefore assist in the orientation of future research activities directed at an examination of the extent and nature of the manpower and employment implications of new technologies in Ontario.

2.0 DEMOGRAPHIC TRENDS

Figure 1 shows that Ontario's population has been increasing every year since 1940. The most rapid period of growth occurred in the early 1950s when average annual growth was around 3.5%, but since the 1950s the broad trend has been toward a diminishing rate of growth. Changes in fertility rates and immigration have been the most significant factors which have affected rates of population growth and decline.

FIGURE 1

POPULATION OF ONTARIO, 1941–1983



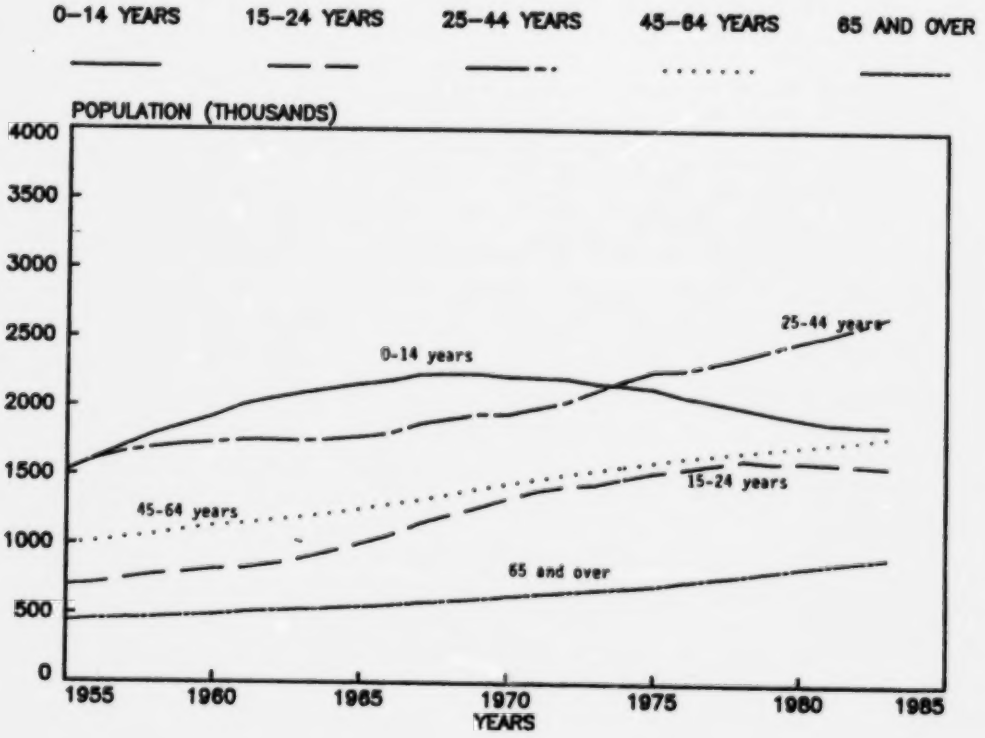
2.1 Fertility Rates

Natural increase has been the dominant source of population growth in Ontario. Fertility rates increased rapidly after World War II; in 1947 the rate increased to 3.28, and in 1954 it peaked at 3.94. In the 1960s the rate started to decline, and in 1982 reached 1.69, which is far below the level necessary to replace the population on a long-term basis. However, the baby boom of the 1950s has had, and will continue to have, very significant effects on Ontario's labour force, as shall be described later.

Figure 2 shows the movement of the baby boom through the years, with the 0 to 14 year age group of the population reaching its largest size in the late 1960s, the 15 to 24 age group peaking in the late 1970s, and the 25 to 44 age group still on the increase in the 1980s. The decline of the fertility rate in the 1960s has resulted in the beginning of a decline of the proportion of young persons aged 0-24 in the population, and an increase of persons aged 25 and older. Thus, the early 1980s shows the beginning of a trend toward a gradually aging population.

FIGURE 2

POPULATION BY AGE, ONTARIO, 1955–1983



2.2 Immigration

Since Ontario has traditionally received the largest share of total immigration to Canada, (approximating one-half of the total number of immigrants admitted), its population growth is closely tied to increases in national immigration levels. Immigration levels to Ontario have fluctuated widely from year to year. For example, as a result of changes to immigration policy in 1950, which permitted the entry of large numbers of displaced persons from Europe, the number of immigrants admitted to Ontario increased to over 104,000 in 1951 from approximately 39,000 the previous year.[1] After 1951, immigration levels remained relatively high, showing significant increases during years of international refugee movements, and declining somewhat after 1976 as a result of further changes to immigration policy. Over the years, Ontario's population always gained from international migration movements, as immigration far exceeded emigration. Interprovincial migration movements also resulted in a population gain for Ontario until the mid 1970s when the trend reversed to a net loss.[2] Indications are that in the last few years, following the collapse of the western Canadian mega-projects, the flow westward has ceased once again. Over the post-war period immigration has not been as an important contributor to labour force growth as have other factors.

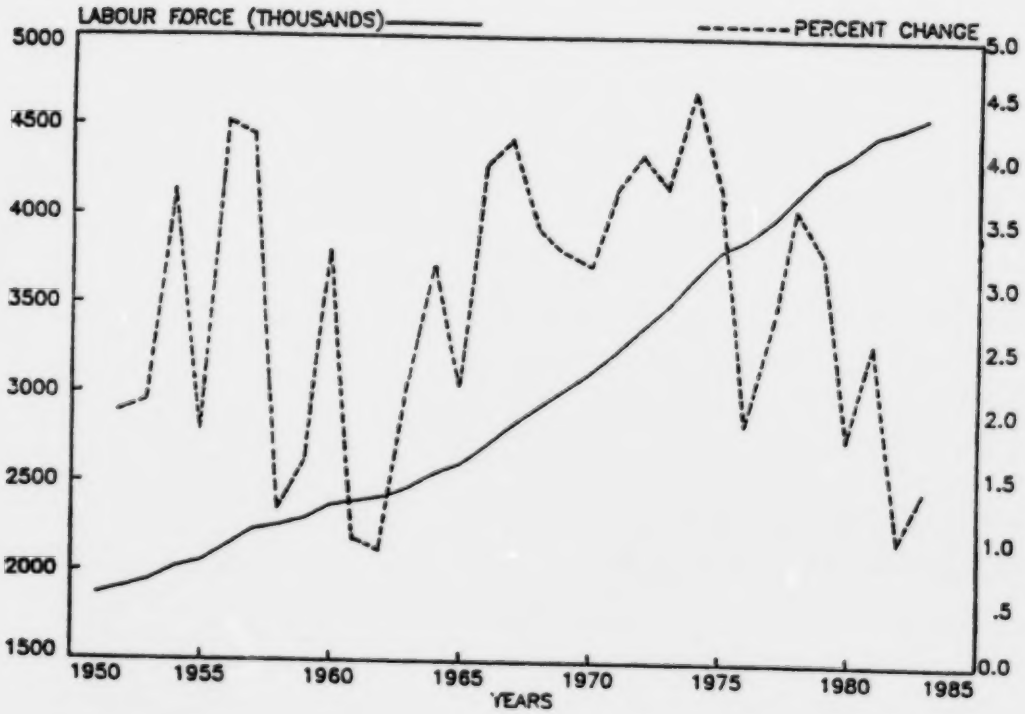
3.0 LABOUR MARKET TRENDS

3.1 Labour Force Growth and Composition

In 1951 Ontario's labour force consisted of some 1,870,000 persons; by 1983 it had grown to 4,570,000, representing an average annual increase of 2.8 percent. Figure 3 presents the growth of Ontario's labour force over a period of three decades, 1951-1983. Labour force growth or decline may be explained by changes in source population (population of working age) and by changes in participation rates. The growth of the source population,[3] together with the rising participation rates of women, have made the largest contributions to labour force growth in Ontario.

FIGURE 3

LABOUR FORCE OF ONTARIO, 1951–1983

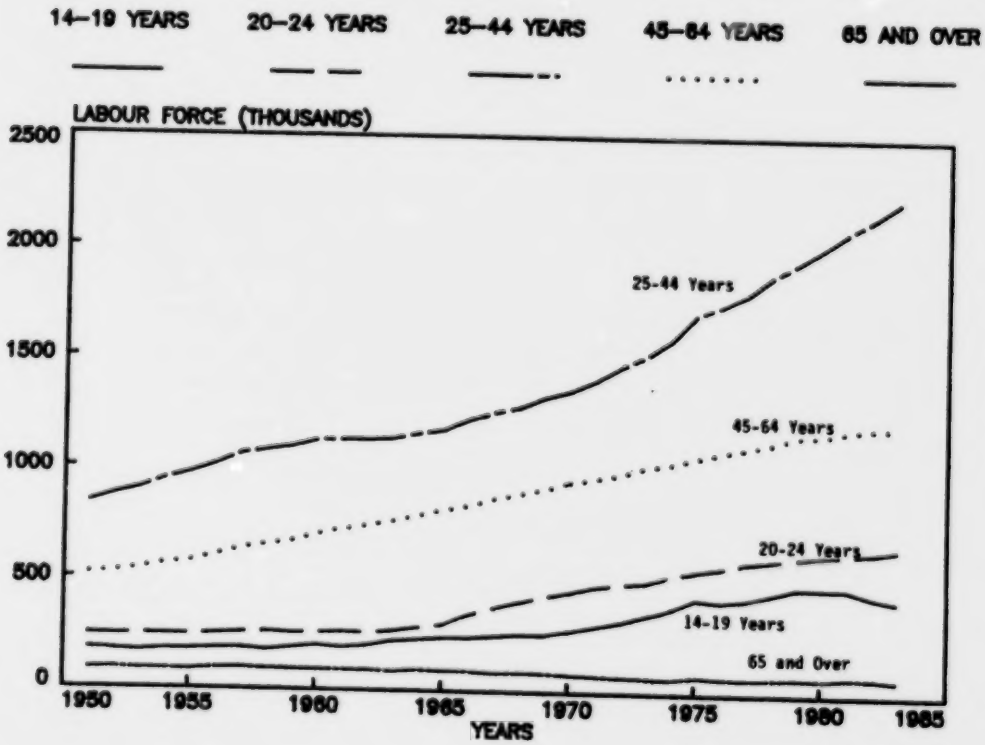


3.1.1 By Age

As noted, natural increase and immigration account for Ontario's growth in population over the years. The growth of the labour force in the 1950s may be attributed, for the most part, to the dramatic upsurge in immigration in that period, while the growth of the mid 1960s to mid 1970s may be explained by the entry of the baby-boom population into the labour force and the changing participation rates of women of all ages. (Immigration as a source of labour force growth declined significantly after the mid sixties.) Figure 4 shows the increasing number of young persons in the labour force beginning around 1965, and, in particular, how the share of young persons aged 20-24 increased rapidly after that time.

FIGURE 4

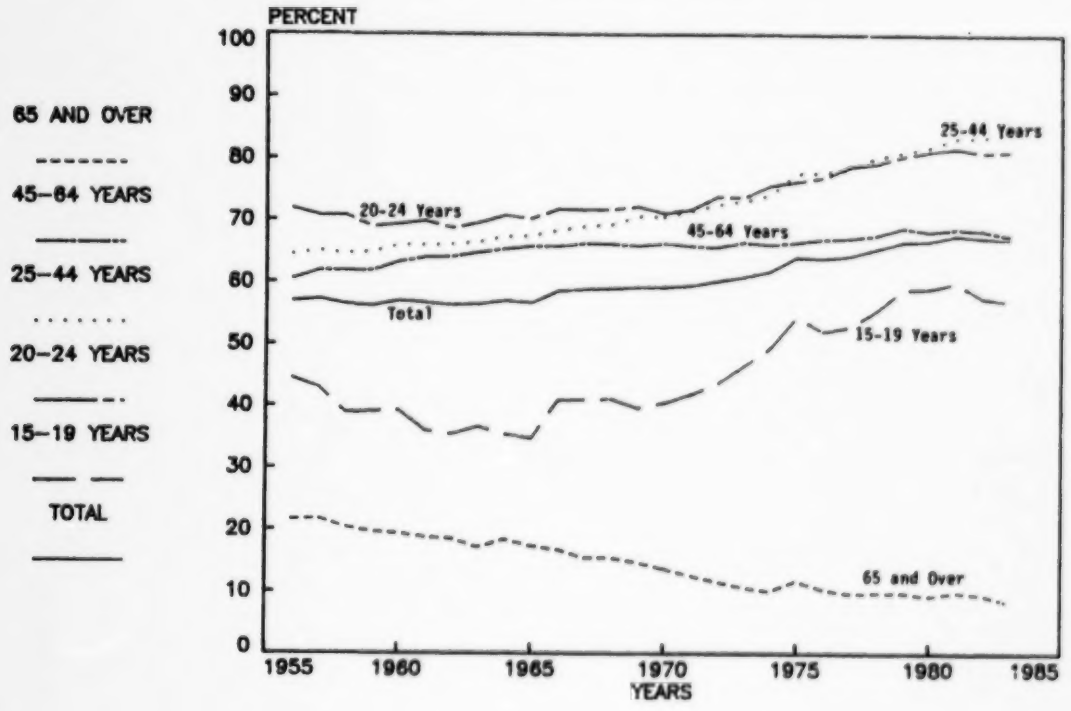
LABOUR FORCE BY AGE, ONTARIO, 1951–1983



The fact that the share of young persons in the labour force did not increase more dramatically was due largely to increasing school enrollments, an increase in the compulsory school leaving age to 15, and the prolongation of youth education. Nevertheless, participation rates for youth show a gradual increase, with more rapid acceleration after 1970 for the 15 to 19 year old group. See Figure 5.

FIGURE 5

PARTICIPATION RATES BY AGE,
ONTARIO, 1956–1983



What is particularly striking about labour force trends by age, as seen in Figure 4, is the rapid acceleration of the 25-44 age group and its dominance of the labour force since the mid 1970s. This is the baby-boom generation of the 1950s, now by and large having completed their education, swelling the ranks of the labour force in large numbers. This is the beginning of a trend towards a gradually aging labour force.

Figure 5 shows participation rates by age, indicating declining rates for older age groups. It is necessary, however, to look at participation rates by age and sex in order to see that the trends are different for males and females.

FIGURE 6

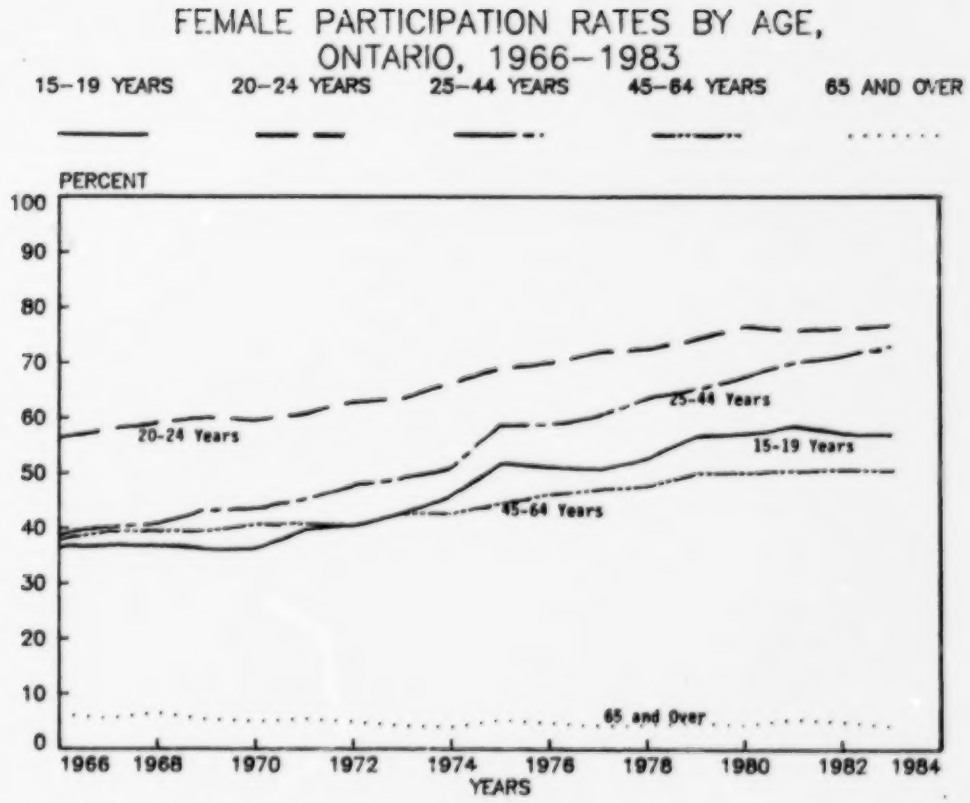
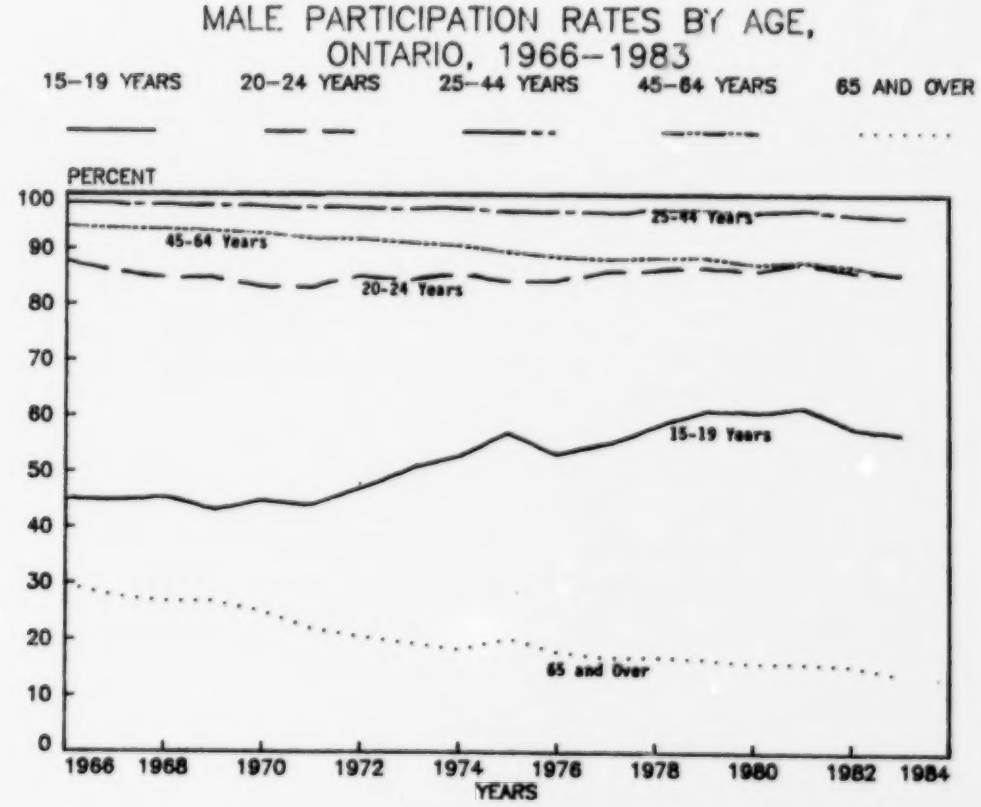


FIGURE 7



3.1.2 By Sex

The most dramatic trend affecting the growth and composition of Ontario's labour force over the past thirty years has been the entry of women into the labour force. Women increased their share of the labour force from nearly one-quarter to over 40 percent between 1951 and 1983. See Figures 8 and 9.

The change in the composition of the labour force has been due to steadily increasing participation rates by women of all ages, particularly those between the ages of 25 and 44, the major childbearing and childraising years. Men, on the other hand, have been part of a trend towards declining rates, which is reflected in their gradually declining labour force share. It is noteworthy, too, that the trend is towards increased participation by women in all marital status categories, and that the greatest increase has been in the participation rate of married women, from 15 percent in 1951 to 56 percent in 1982.[4] Similarly, the participation rate of women who have young children under 16 has steadily increased to 56 percent in 1982.

FIGURE 8

LABOUR FORCE BY SEX, ONTARIO, 1951–1983

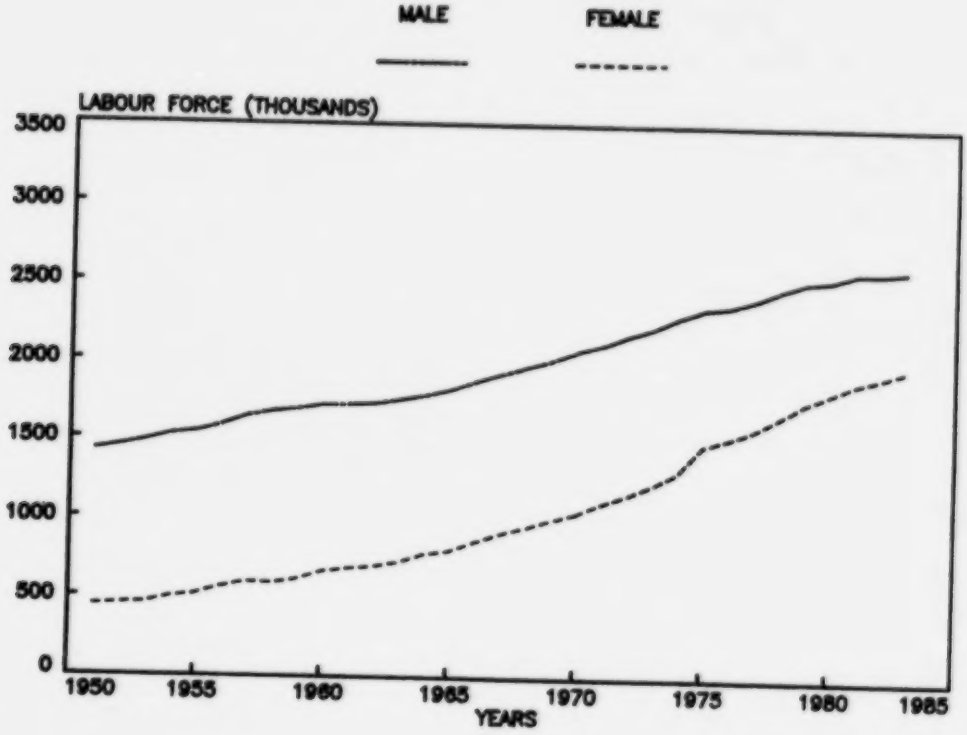


FIGURE 9

PERCENTAGE DISTRIBUTION OF MALES AND FEMALES IN THE LABOUR FORCE, ONTARIO, 1951–1981

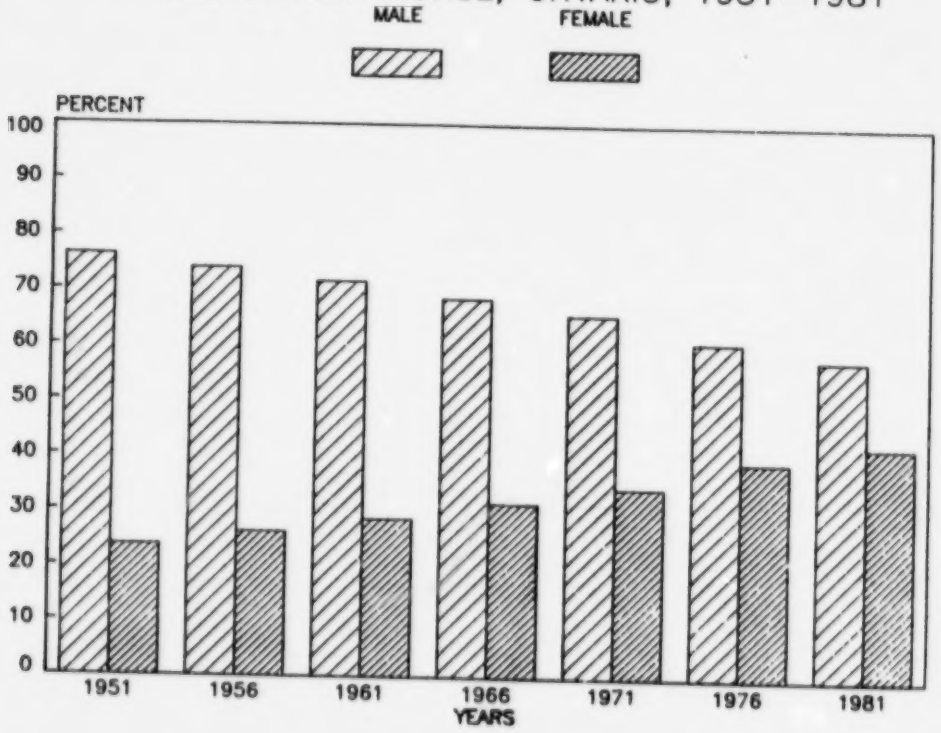
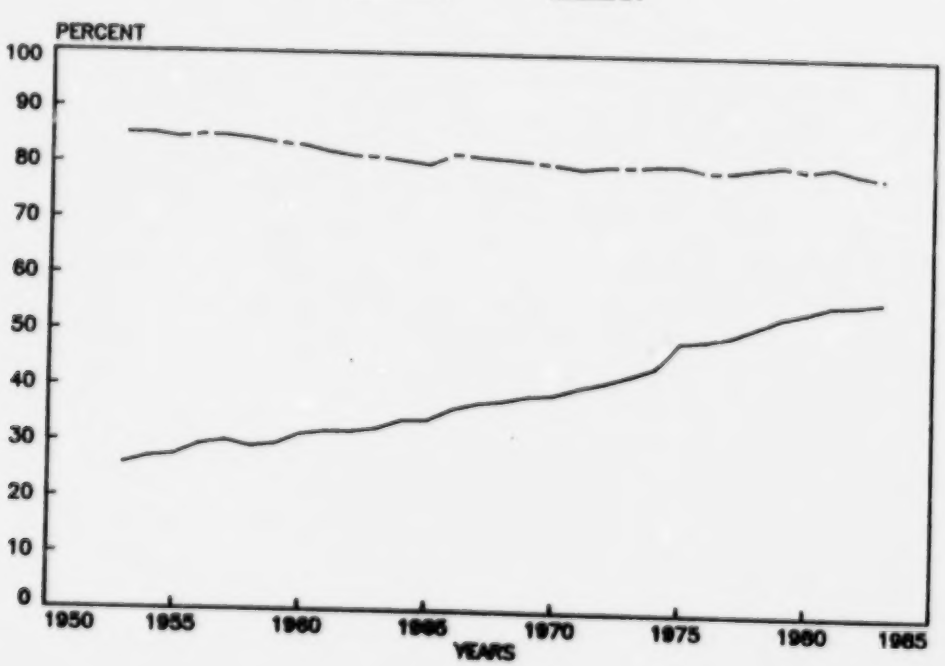


FIGURE 10

PARTICIPATION RATES BY SEX, ONTARIO, 1953–1983

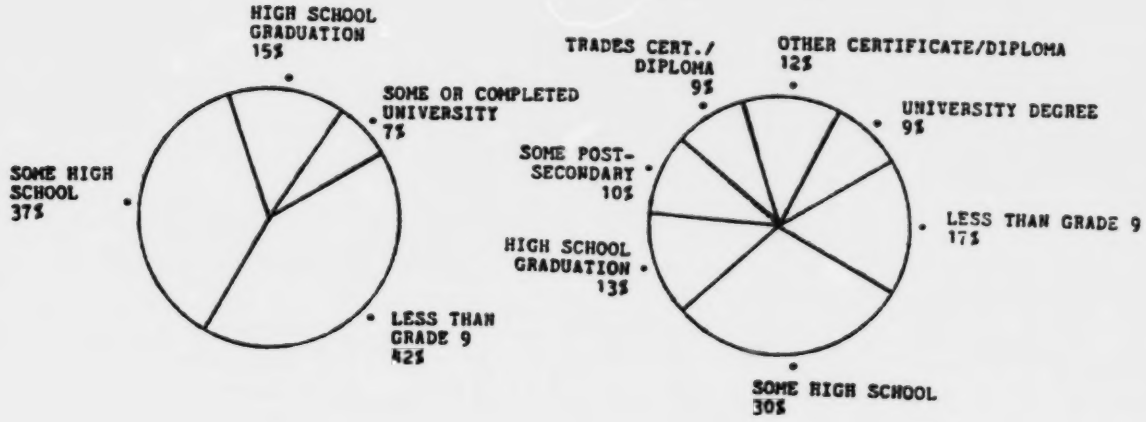


3.1.3 By Educational Attainment

The level of education of Ontarians has risen significantly over the last few decades. Figure 11 shows the very substantial increase in the level of education of the population of Ontario over a period of twenty years, with the proportion of those in the total population with a Grade 8 education or less shrinking from 42 percent in 1960 to 17 percent in 1981. Close to 80 percent had not completed high school in 1960, compared to close to 50 percent in 1981. Similarly, the proportion of the population having educational attainment at the post-secondary level has also increased dramatically. The proportion of the population having some post-secondary education has increased to about 40 percent in 1981.

FIGURE 11

COMPARISON OF HIGHEST LEVEL OF SCHOOLING FOR POPULATION, ONTARIO, 1960 AND 1981



School enrollment in Canada, at both the elementary and secondary level, has increased from the 1940s onward, with secondary enrollment reaching a level of 98 percent of all those eligible by the early 1970s.[5] Post secondary enrollment made dramatic strides in the 1960s, more than doubling from 8.9 percent of all high school graduates in 1959 to 18.5 percent in 1971. The mid and late 1960s saw the entry of the baby-boom generation into the secondary and post-secondary school system at an unprecedented rate, augmented by the large number of immigrants who came in the 1950s. The momentum of post-secondary enrollment has continued into the 1970s with female enrollment rising at a faster rate than male enrollment.

Over the years there has occurred a narrowing of educational attainment differences between males and females in the population. Figure 12 shows that in 1981, in general, more females than males had completed high school and had some form of post-secondary education, but more males had trade certificates and held university degrees.

The difference in the overall educational level of the population and labour force, as shown in Figures 11, 13 and 14, is not great, but more members of the labour force than the population have university degrees.

Similarly, there are few differences between the educational level of males and females in the labour force, with females having a slightly higher level of education (no figure shown). In 1977, it was found that 22.6 percent of female workers had graduated from a college or university, compared to 20.8 percent of males.[6] However, more males than females had a university degree (14 percent as compared to 10 percent).[7] Recent data also indicate some continuing differences in the kinds of programs men and women register in at college or university. Fewer women than men, for example, were enrolled in Engineering and Applied Science in 1982/1983 with women comprising 11.2 percent of total enrollment. However, in other professional courses such as Medicine, Law and Veterinary Medicine, which previously had been male-dominated, women's enrollment exceeded 40 percent and in Commerce and Business Administration their enrollment stood at 42.9 percent. Close to 40 percent of all post-graduate students were women in 1982/1983.[8]

FIGURE 12

HIGHEST LEVEL OF SCHOOLING FOR POPULATION 15 YEARS AND OVER, BY SEX, ONTARIO, 1981

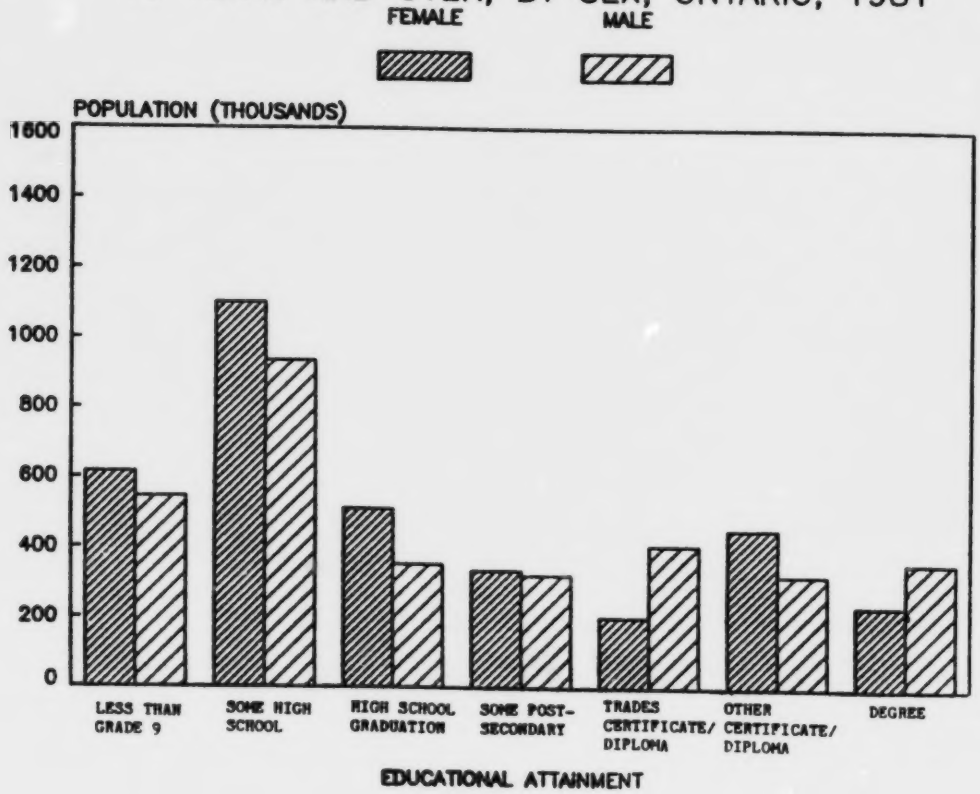
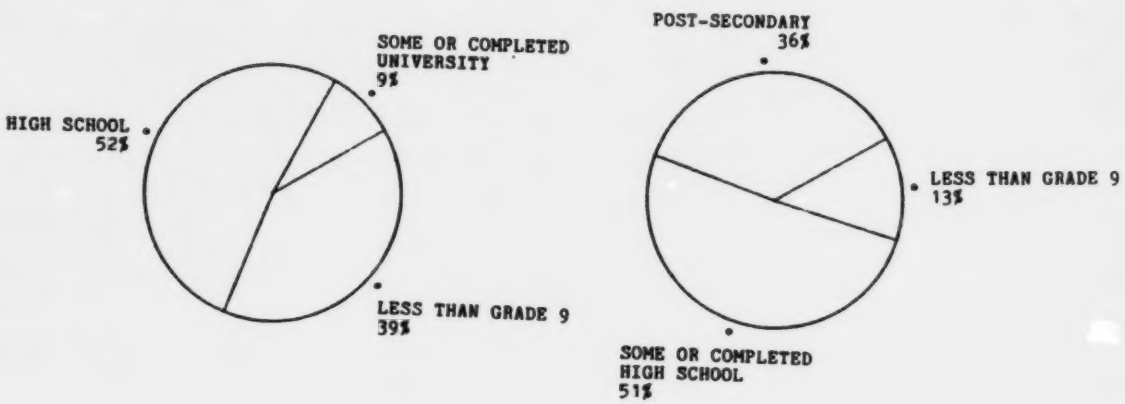


FIGURE 13

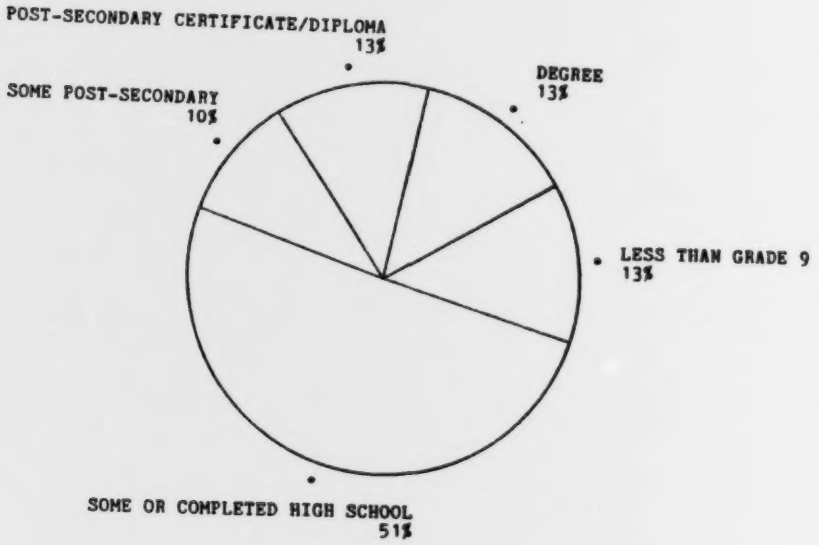
COMPARISON OF HIGHEST LEVEL OF SCHOOLING FOR LABOUR FORCE, ONTARIO, 1960 AND 1983



[1] Statistics on vocational or technical training are not available for 1960.

FIGURE 14

HIGHEST LEVEL OF SCHOOLING FOR LABOUR FORCE, ONTARIO, 1983 (DETAILED BREAKDOWN)

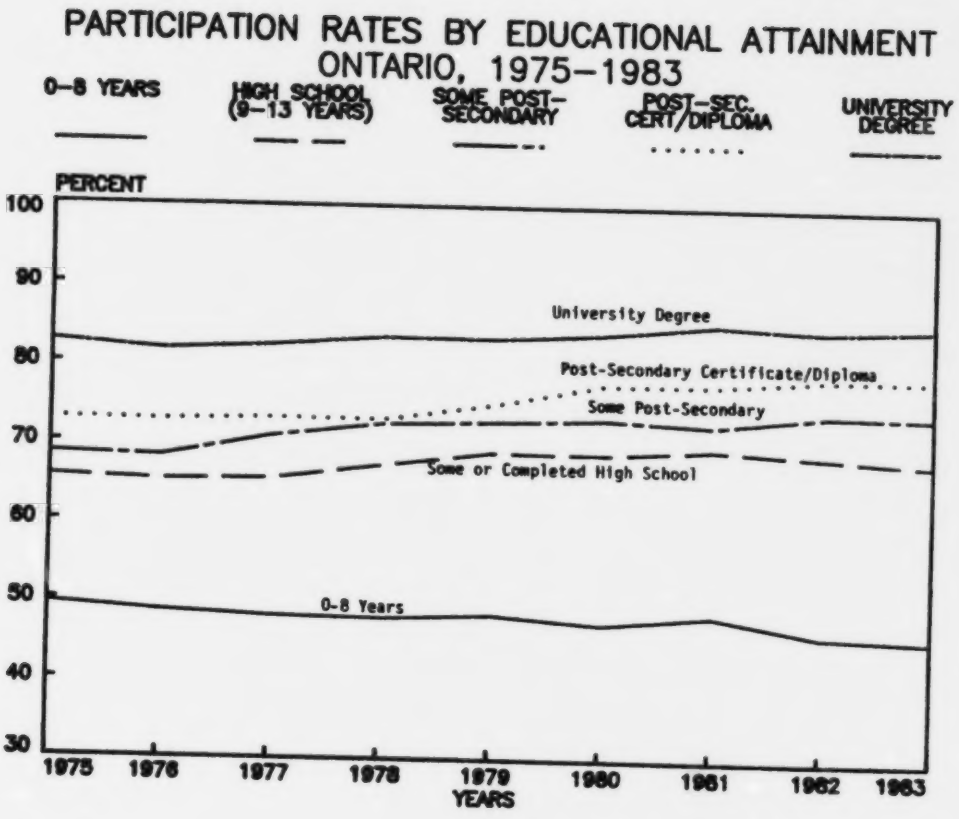


1983

During the 1960s and 1970s changes were made to the Immigration Act which increased the educational requirements for immigrants to Canada. The point system, instituted in 1966, stressed education and skill as important criteria for the entry of independent applicants. The point system was further expanded in 1976 to increase the weight of employment-related factors, such as education, in assessing the credentials of independent and nominated immigrants. But it should be noted that since 1974, the proportion of immigrants (independent and nominated) selected at least partly on the basis of education and skill has declined from about 74 to 48 percent as a result of the increase in the number of sponsored immigrants admitted. Sponsored immigrants are close relatives, not rated on the point system.

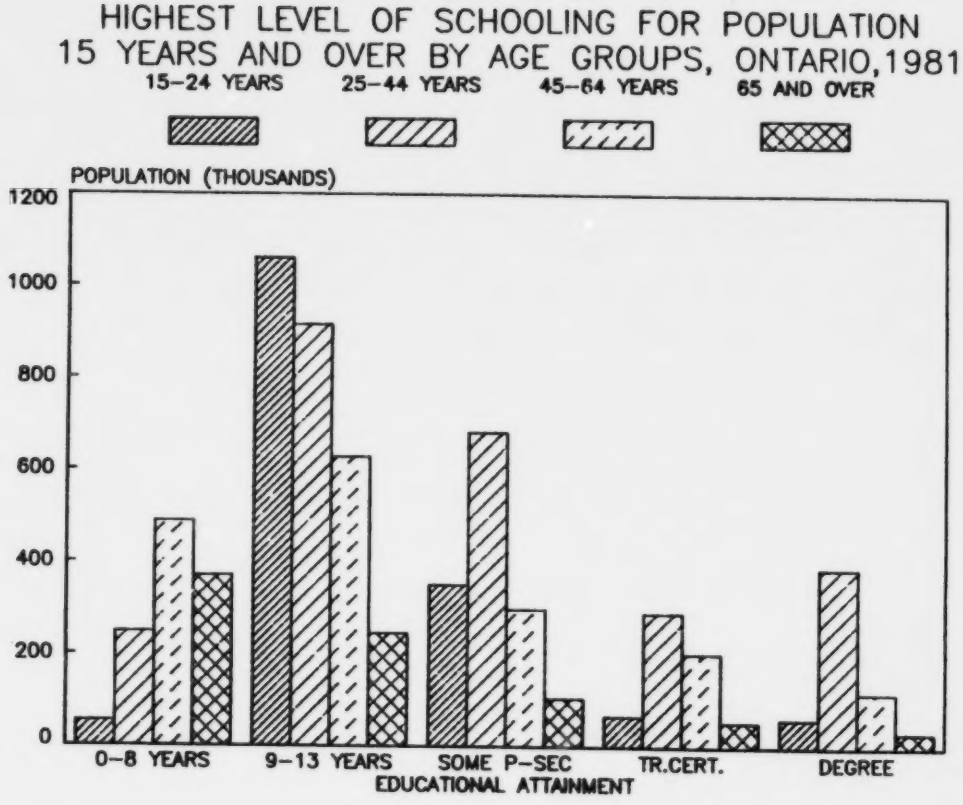
Historical trends indicate that labour force participation rates go up with higher levels of education. Figure 15 shows that holders of university degrees have consistently had the highest labour force participation rates, while those with a Grade 8 education or less had the lowest rates. The increasing educational attainment of females has been closely linked to their rapidly rising participation rate over the years.

FIGURE 15



In general, it is apparent that the level of educational attainment declines with population groups of increasing age. For example, while only 6.1 percent of the Ontario population in the age category 25-34 had less than a Grade 9 education in 1981, some 46 percent in the 65 and over age category had less than Grade 9.[9] See Figure 16. Thus, as the more highly educated younger population replaces the older, less educated population, the overall level of education of Ontario's labour force will rise.

FIGURE 16



3.1.4 By Industry

As the labour force of Ontario has grown over the past three decades, there has been a very pronounced shift in employment from the goods-producing sectors to the service-producing sectors. See Figures 17 and 18. Although employment in the manufacturing sector has grown over this period, employment growth in the service sector has been much more rapid.

FIGURE 17

LABOUR FORCE BY INDUSTRY, ONTARIO, 1951–1981

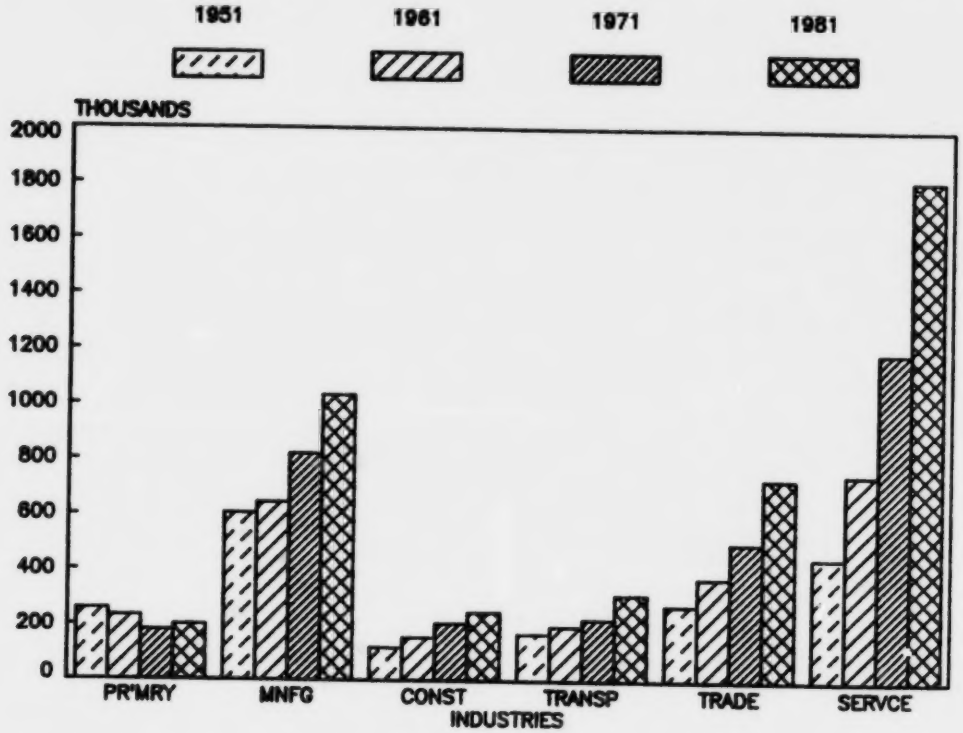


FIGURE 18

PERCENTAGE DISTRIBUTION OF THE LABOUR FORCE BY INDUSTRY, ONTARIO, 1951–1981

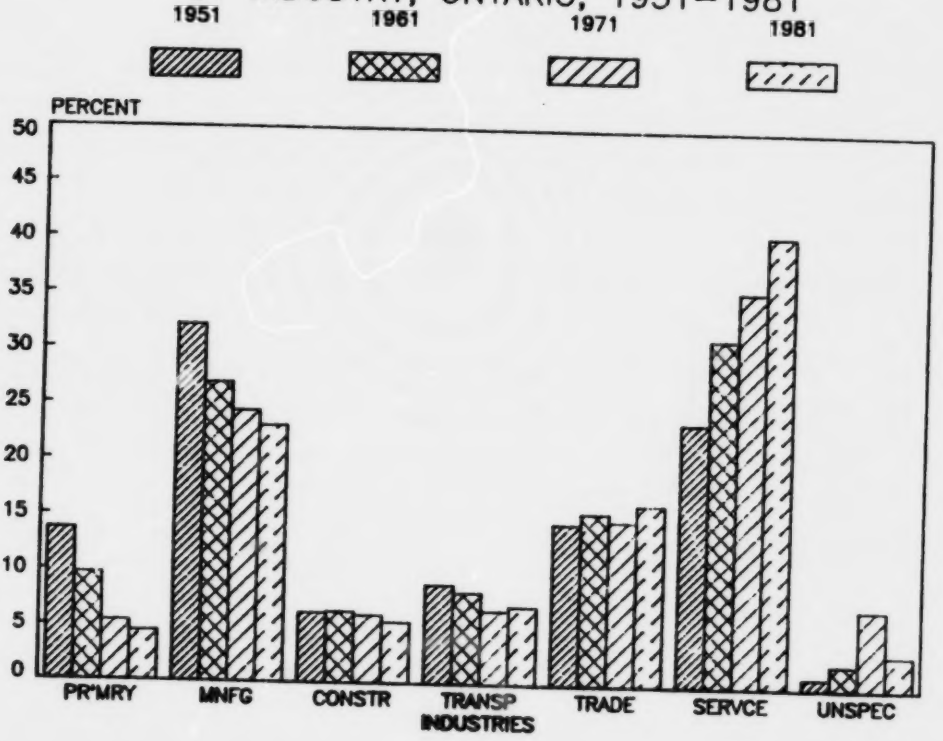


Figure 18 shows that the proportion of the labour force in manufacturing declined steadily from 32.1 percent in 1951 to 23.1 percent in 1981.

On the other hand, the growth of Ontario's population due to rising immigration levels beginning in 1951, and the baby boom of the late 40s and 50s, created a strong demand for increased health, education, real estate, financial and other services in the 1960s and 1970s. In addition, as a result of post-war economic growth leading to larger tax revenues, and as a result of population pressures, government spending on programs and services increased. The rise of real incomes, the development of consumerism and other changes in social values regarding the quality of life and recreation also created a demand for an increasing range of personal, business and community services. As a consequence, the proportion of the labour force in service industries (which in these figures includes business, personal and community services as well as finance, real estate, insurance and public administration) increased dramatically from 23.6 percent in 1951 to 40.6 percent in 1981.

3.1.5 By Occupation

Accompanying the shift of employment towards the service producing industry sectors of the economy, there has also been an important shift of employment to white collar occupations.

Figures 19 and 20 show a steady growth of employment in managerial, professional, clerical, sales and service occupations over the period 1951-83.

Figures 21 and 22 also show an increase in the proportion of the labour force employed in managerial and professional occupations over the period 1951-83, and a reduction in the proportion engaged in production-related occupations.

In aggregate, employment in the managerial, professional, clerical, sales and service occupations accounted for about two-thirds of Ontario's workforce in 1983, up from about one-half in 1951.[10]

Figures 23 and 24 show the percentage distribution of males and females in various occupational groups for 1975 and 1983. Females were most highly represented in clerical and service occupations, while males were most highly represented in primary, production, construction, transportation and material handling occupations. Males were also more highly represented in managerial, professional and sales occupations, but the gap between males and females in these occupations has narrowed somewhat between 1975 and 1983.

FIGURE 19

LABOUR FORCE BY OCCUPATION, ONTARIO, 1951–1971

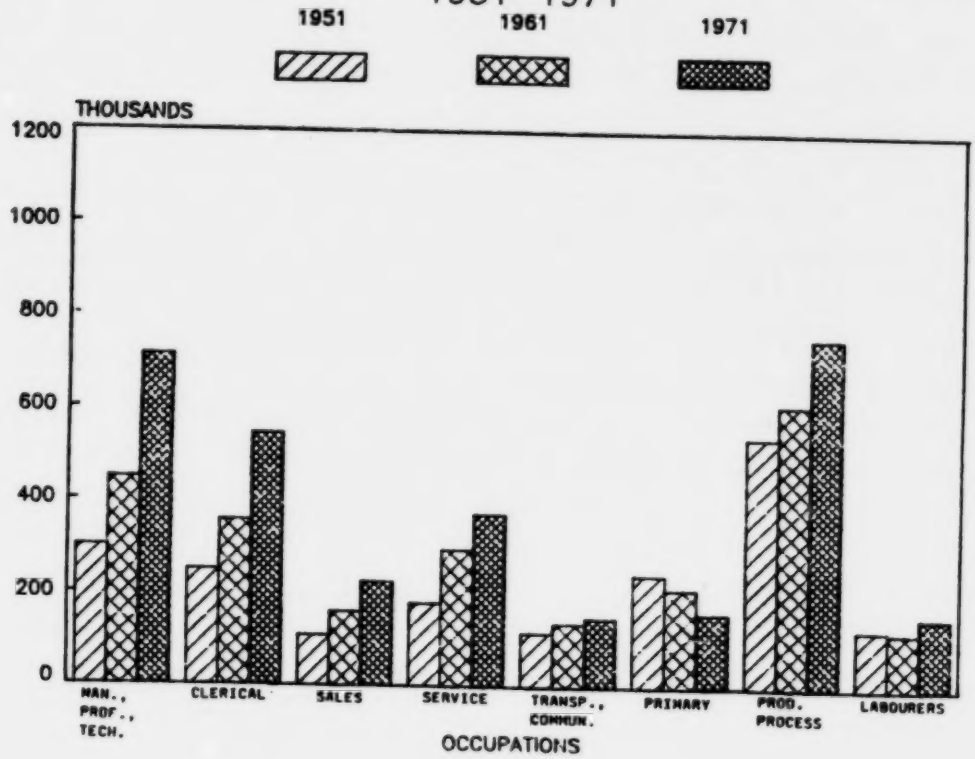


FIGURE 20

LABOUR FORCE BY OCCUPATION, ONTARIO, 1975, 1979 AND 1983

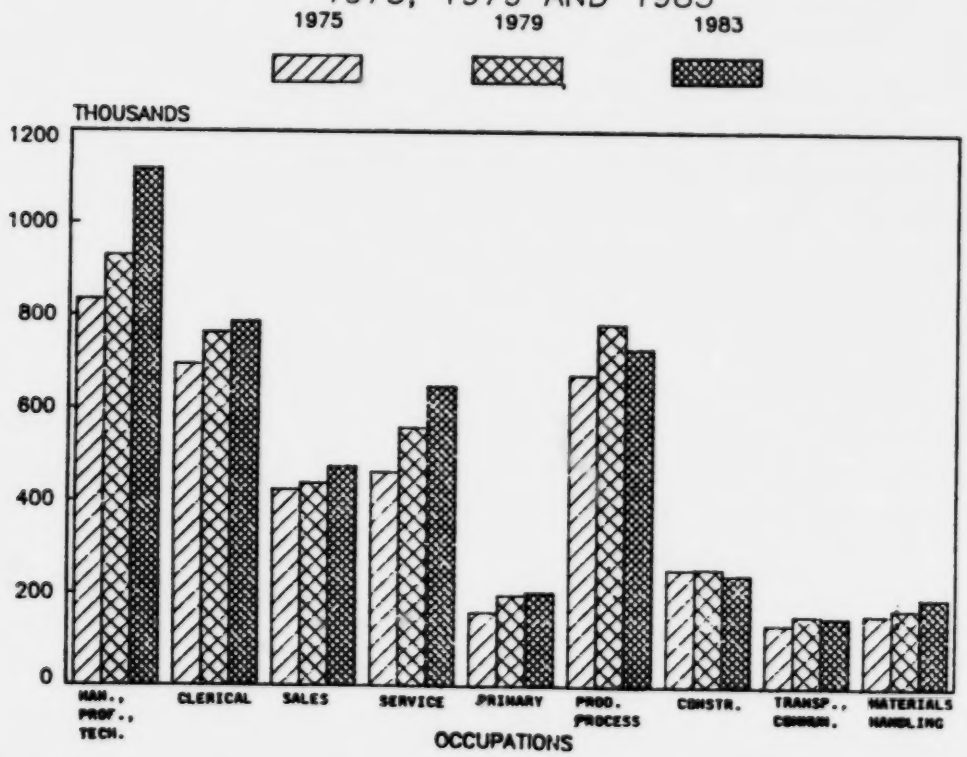


FIGURE 21

PERCENTAGE DISTRIBUTION OF LABOUR FORCE BY OCCUPATION, ONTARIO, 1951, 1961 AND 1971

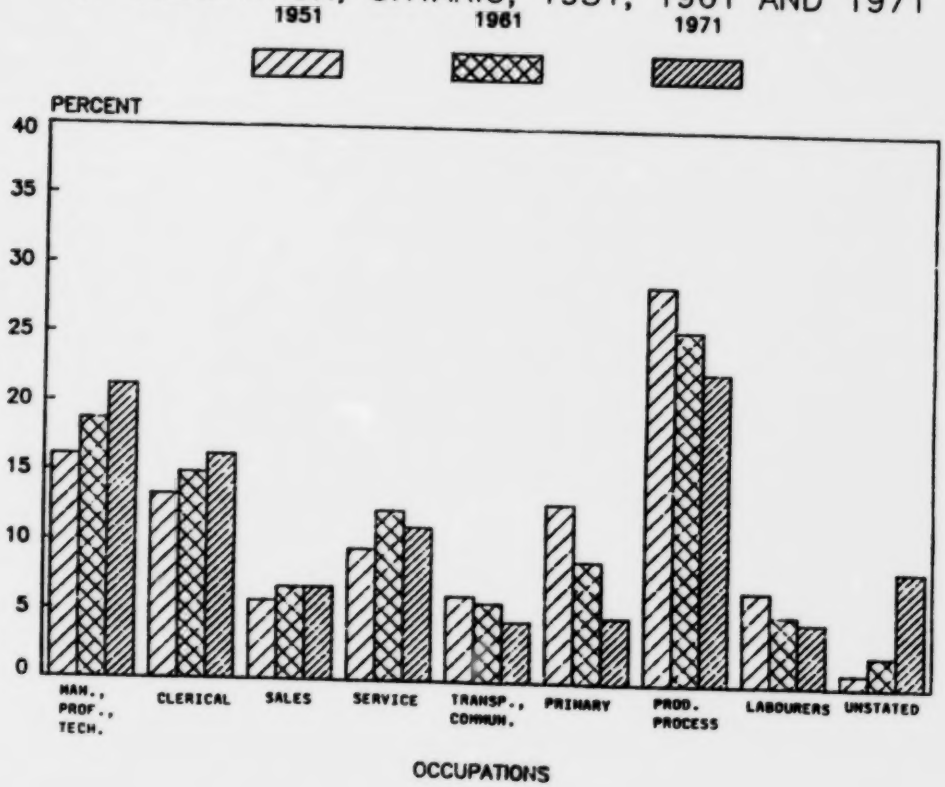


FIGURE 22

PERCENTAGE DISTRIBUTION OF LABOUR FORCE BY OCCUPATION, ONTARIO, 1975,1979 AND 1983

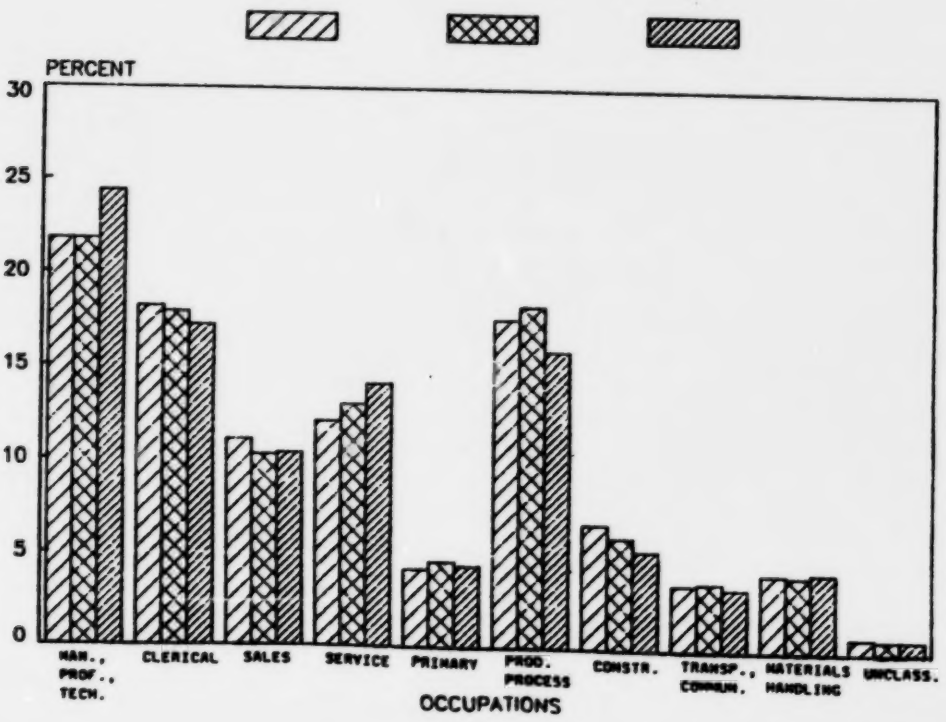


FIGURE 23

PERCENT OF MALES AND FEMALES IN THE LABOUR FORCE BY OCCUPATION, ONTARIO, 1975

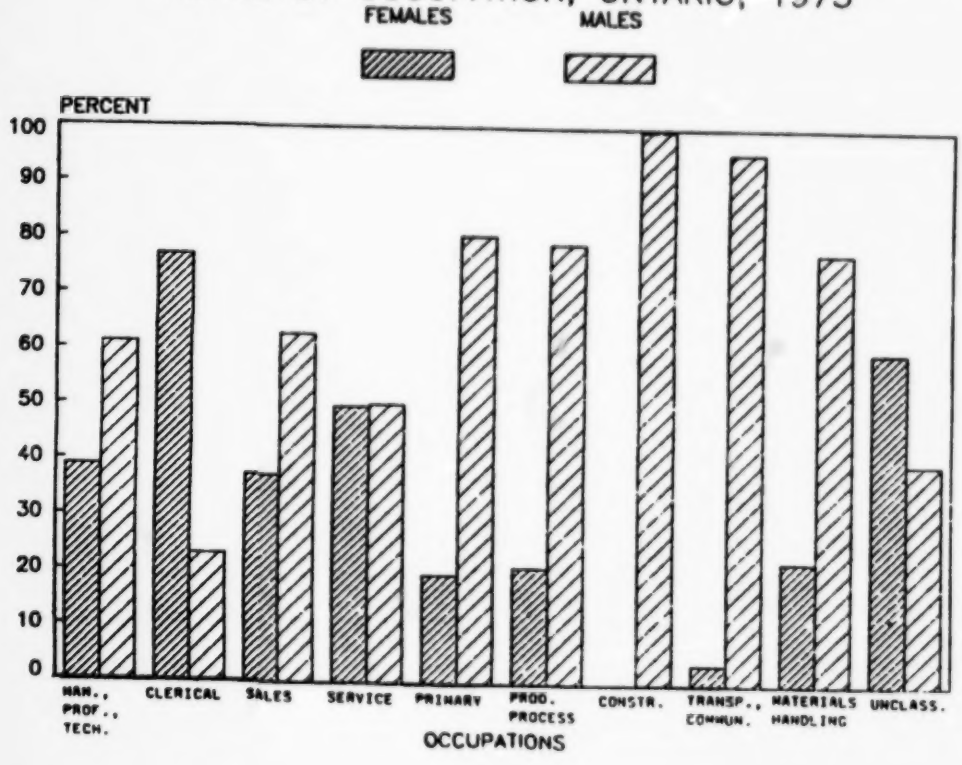
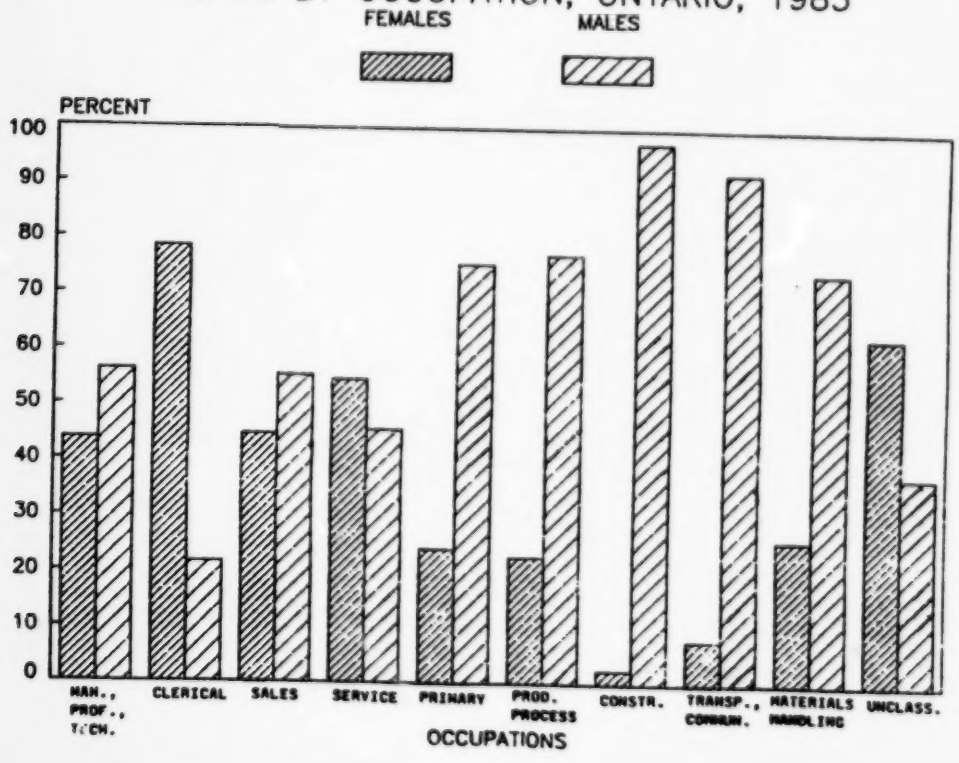


FIGURE 24

PERCENT OF MALES AND FEMALES IN THE LABOUR FORCE BY OCCUPATION, ONTARIO, 1983

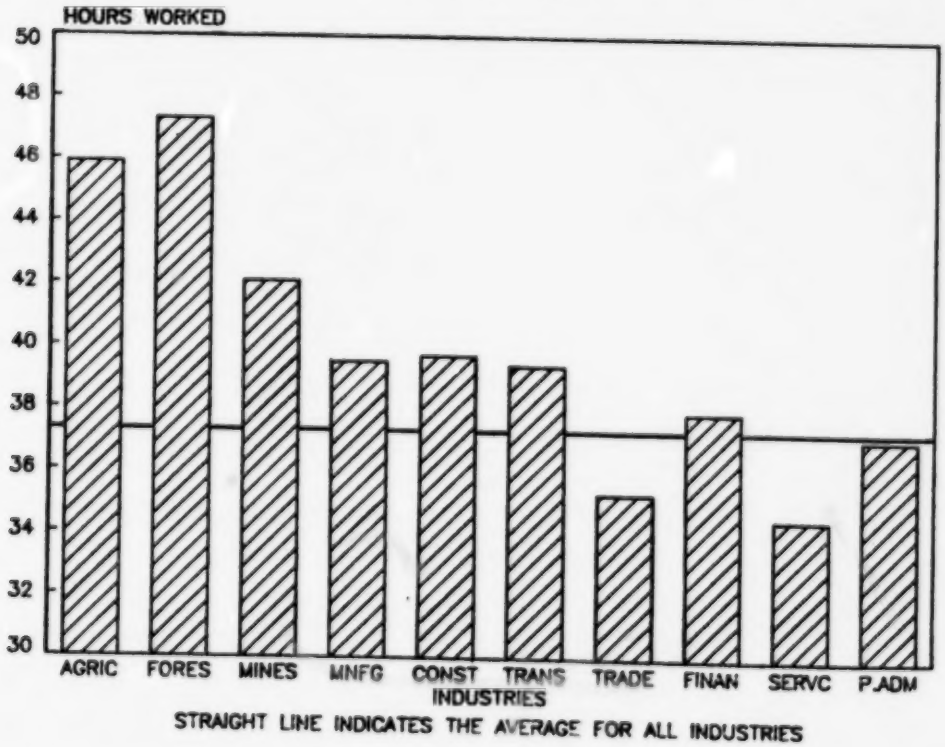


3.2 The Organization of Work

There has been a gradual decline in the number of hours worked up until World War II, but since that period the average number of hours worked by all members of the labour force seems to have levelled off.11 However, when the number of hours usually worked in a week is disaggregated by industry, it is clear that there is considerable variation from one industry sector to another. See Figure 25. Primary industries show the highest number of hours usually worked per week, followed by construction, manufacturing, transportation, communication and utilities. The lowest number of hours usually worked per week is in the service industries. (It should be noted that any shift of the distribution of the labour force's employment by industry from the primary and manufacturing industries to trade and service-related industries will necessarily cause a decline in the weighted overall average hours worked across all industries, and thus a potential illusion that the average actual work weeks for all industries are declining.)

FIGURE 25

USUAL HOURS WORKED BY INDUSTRY, (MAIN JOB)
CANADA, 1983



STRAIGHT LINE INDICATES THE AVERAGE FOR ALL INDUSTRIES

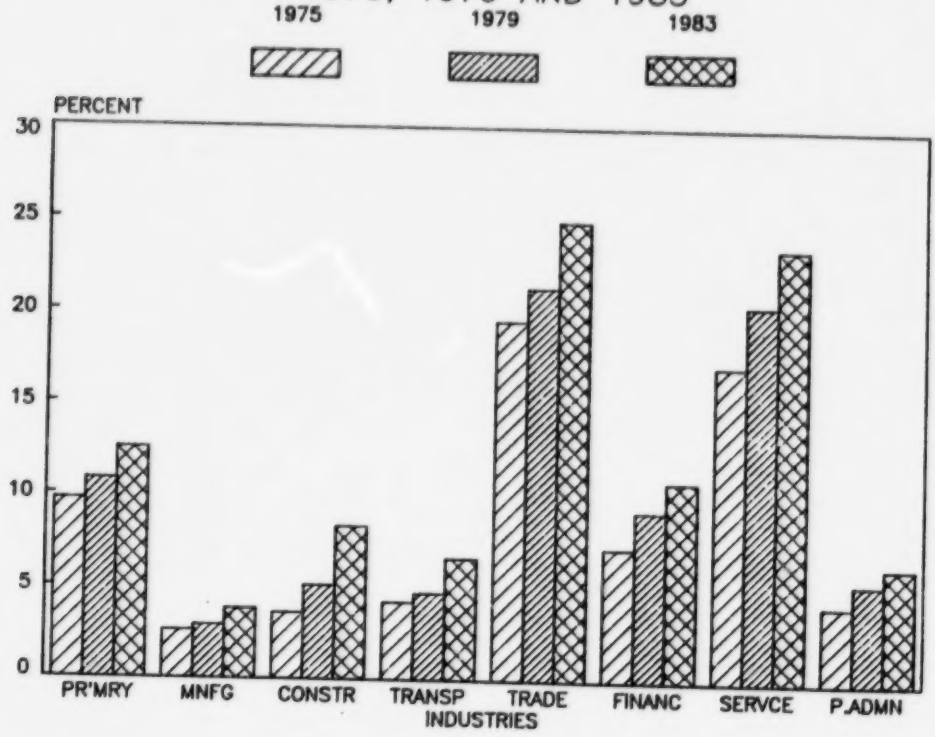
The average number of hours usually worked has also been affected by the increase in part-time employment. (Up to 1975 part-time employment was defined so as to include persons working up to 35 hours per week; after 1975 part-time employment consists of those who usually work less than 30 hours.) Statistics for Canada show that 3.8 percent of all workers worked on a part-time basis in 1953, compared to 13.5 percent in 1981.[12] Figure 26 shows that part-time employment in Ontario rose steadily from 1975 reaching 16 percent of the work force by 1983. In particular, women's share of full-time employment has been declining every year since 1975 while their share of part-time work has been increasing.

FIGURE 26

Figure 27 shows the percentage of part-time work within each industry, with the retail and wholesale trade sector, and the community, business and personal service sector having the largest proportion of part-time workers. These two sectors also show the greatest increase in part-time employment over time, while the manufacturing sector, which has the smallest proportion of part-time workers, shows little increase from 1975 to 1983.

FIGURE 27

PART–TIME EMPLOYMENT BY INDUSTRY, CANADA, 1975, 1979 AND 1983



The growth in part-time employment by occupation is shown in Figure 28. It is noteworthy that all occupations show an increase in part-time work. Clerical, sales and service occupations have the largest proportion of part-time workers, and show the greatest increase in part-time work from 1975 to 1983.

Figure 29 shows the proportion of male or female employment which is part-time for a range of occupations. It is clear that higher proportions of females than males are part-time in all occupations. About 71 percent of all part-time workers in Ontario's labour force were female in 1983, or, in other words, 26 percent of all the women in the labour force worked on a part-time basis. Figure 30 shows that significantly higher proportions of the age-groups 15-24, and 65 and over, tend to work part-time, as compared to the 25-64 age group. Further, Figure 31 shows that between these age groups there are significant differences by sex, with the 25-64 part-time group being largely composed of females.

FIGURE 28

PART–TIME EMPLOYMENT BY OCCUPATION, CANADA, 1975, 1979 AND 1983

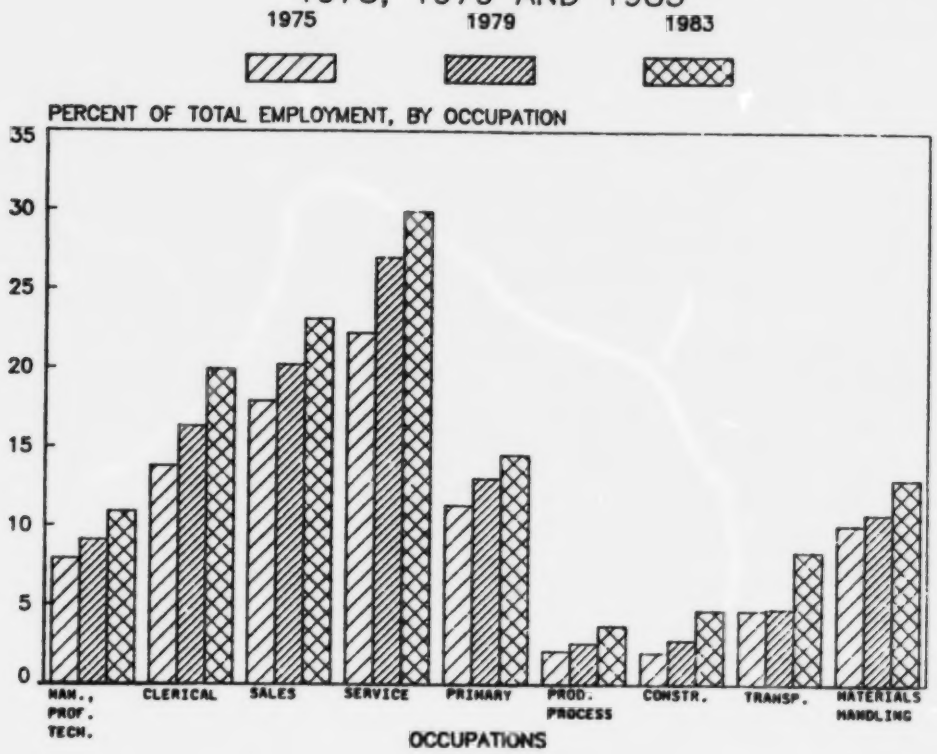


FIGURE 29

PART–TIME EMPLOYMENT BY SEX AND OCCUPATION, CANADA, 1983

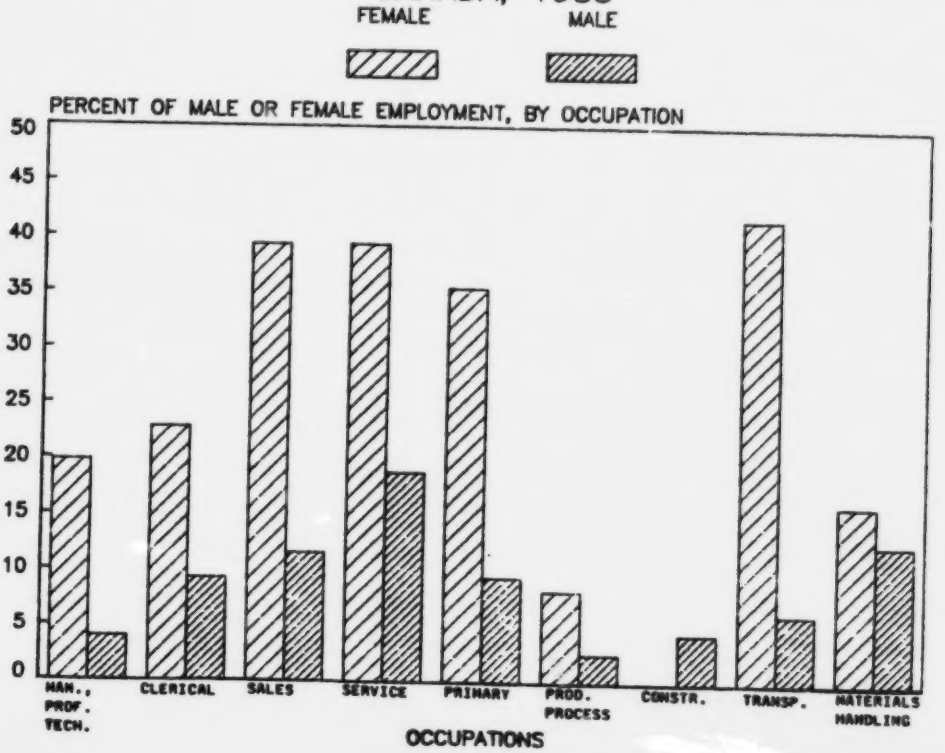


FIGURE 30

PART–TIME EMPLOYMENT BY AGE,
ONTARIO, 1975–1983

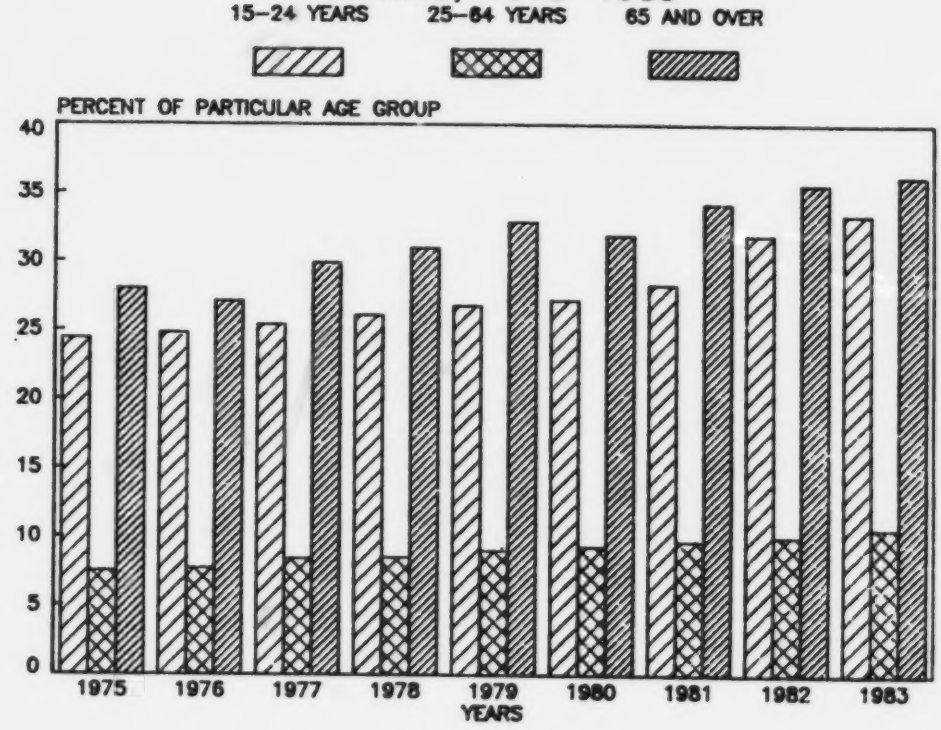
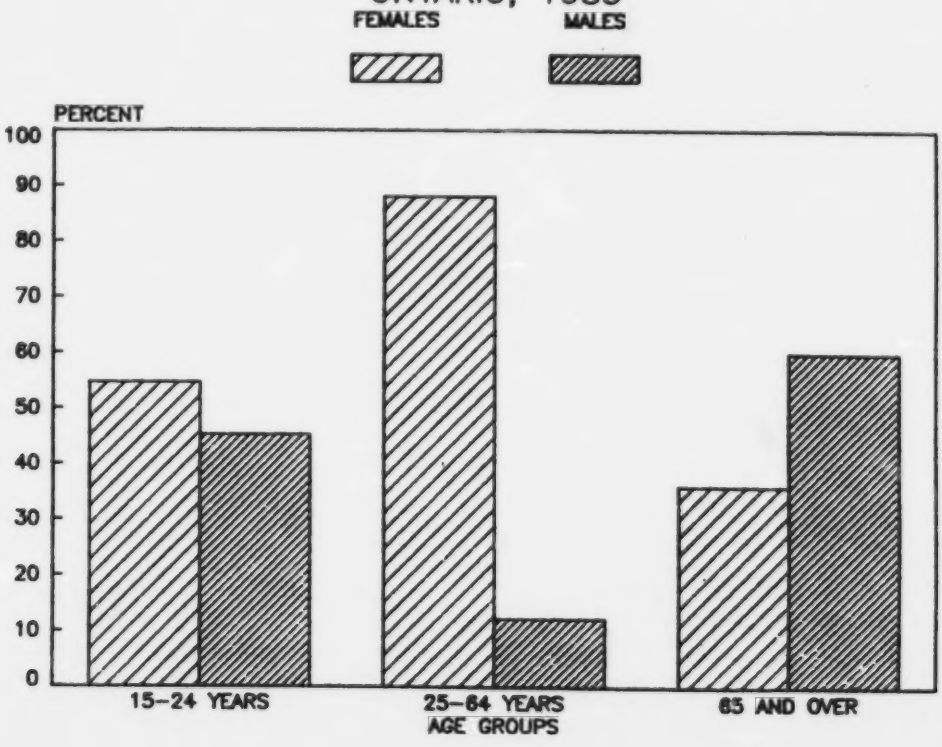


FIGURE 31

PART–TIME EMPLOYMENT BY SEX AND AGE,
ONTARIO, 1983



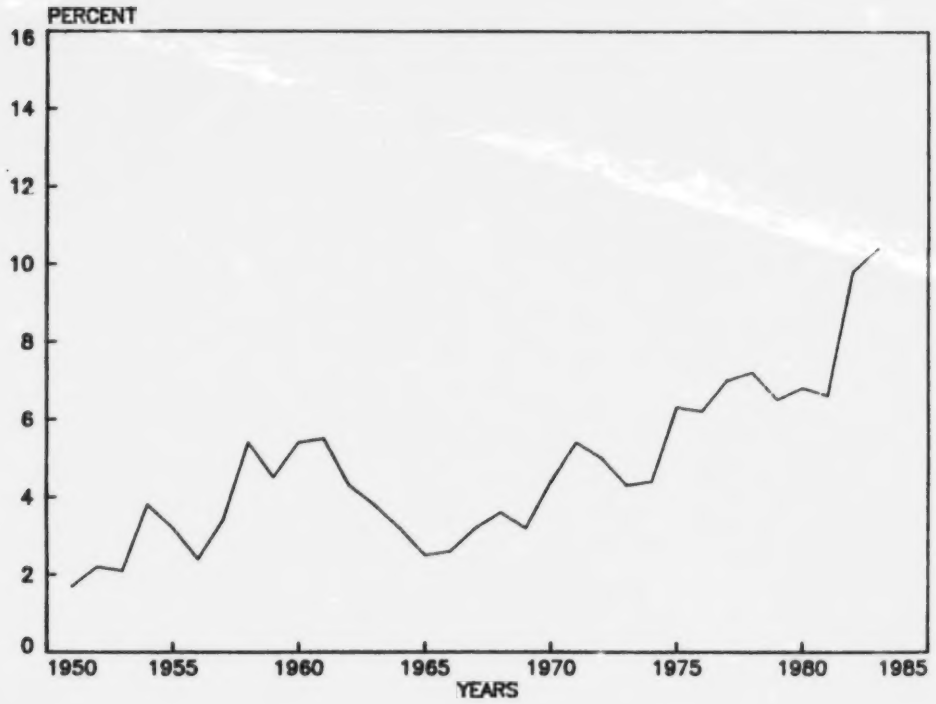
3.3 Unemployment

Figure 32 shows aggregate unemployment rates for all labour force participants in Ontario over a period of three decades.

The fluctuations shown in the rates over time are due to a large variety of economic factors of a frictional, cyclical and structural nature, the analysis of which are beyond the scope of this report. Nevertheless, an examination of unemployment rates by age and sex helps to cast some light on those particularly affected.

FIGURE 32

UNEMPLOYMENT RATES, ONTARIO, 1951–1983



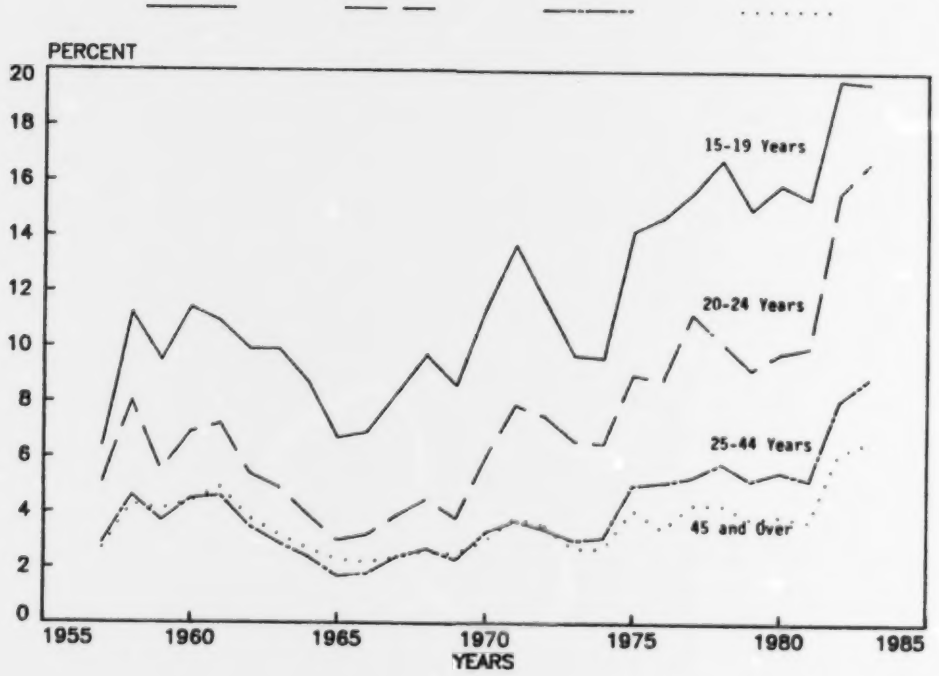
3.3.1 By Age

Figure 33 clearly shows that youth have consistently had the highest unemployment rates, particularly those between the ages of 15 and 19. Youth's share of unemployment has historically been disproportionate, approximating one-half of all unemployed, while their share of the labour force has been about one-quarter.[13]

It may be recalled that youth began entering the labour force in substantially increasing numbers in the mid 1960s, and the increase in their unemployment may be due in part to the inability of the economy to absorb such large numbers of new entrants with little work experience. Further, the traditional tendency of youth to move from one job to another in the early years of their working career tends to increase their unemployment rate.

FIGURE 33

UNEMPLOYMENT RATES BY AGE, ONTARIO, 1957–1983



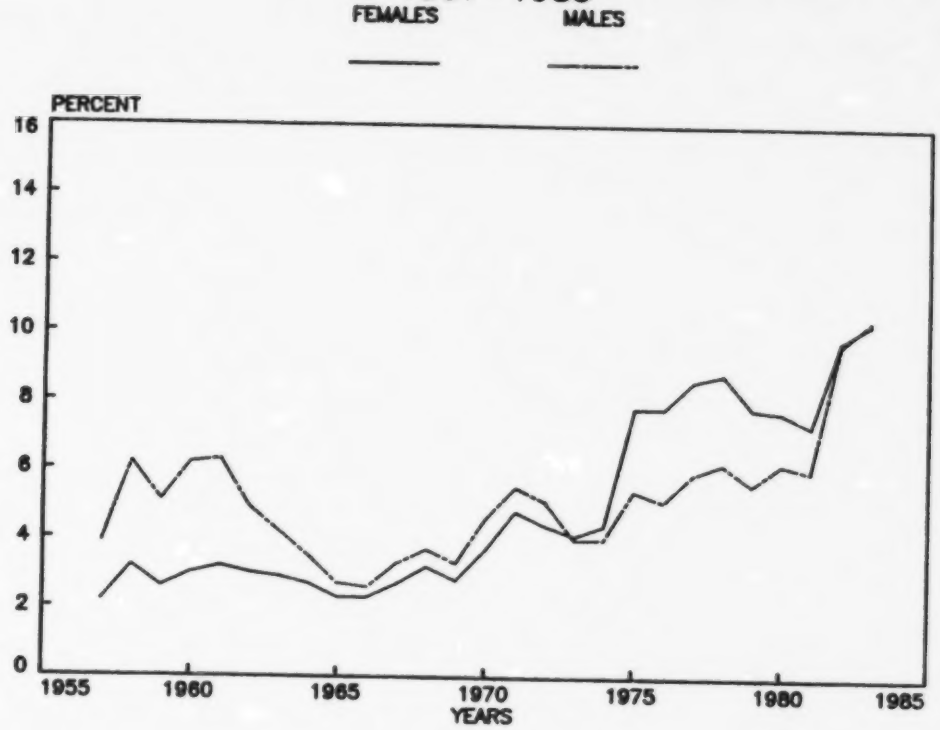
3.3.2 By Sex

Although the size of the female labour force has been increasing steadily for some time, it was only in 1972 that the unemployment rate of females began to exceed that of males. See Figure 34. When unemployment rates are disaggregated by sex and age (no figure shown), it is apparent that most of the disparity between the unemployment experiences of men and women occur in the 25 to 44 year age group. Young men have generally had the same or higher unemployment rates than young women over time. The relatively higher unemployment rates of prime-age

women than prime-age men may perhaps be partly explained by the fact that some women were re-entrants to the labour force with interrupted work histories. Also, traditional hiring patterns may well have narrowed their opportunities to a more limited range of occupations,14 as earlier figures on the occupational distribution of males and females have suggested.

FIGURE 34

UNEMPLOYMENT RATES BY SEX, ONTARIO, 1957–1983

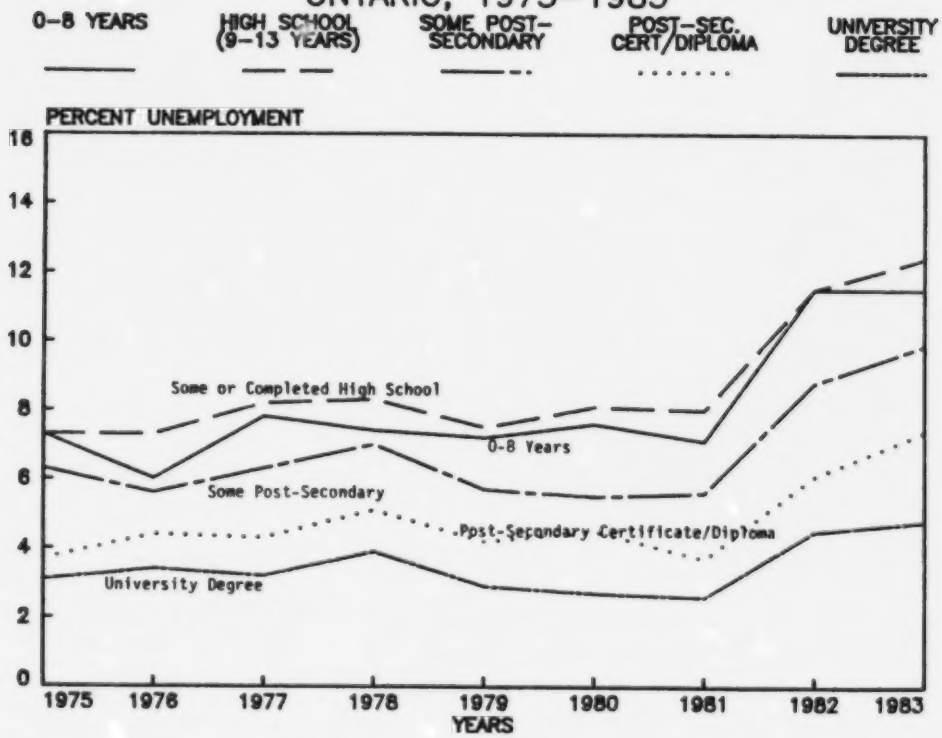


3.3.3 By Educational Attainment

Figure 35 illustrates the continuing historical link between levels of educational attainment and unemployment rates. The relationship is in most instances an inverse one: the higher the level of education, the lower the rate of unemployment. One exception to this is the group having some or complete high school, which has a higher unemployment rate than those having a Grade 8 education or less. This may well be explained by the greater presence of youth aged 15 to 19 in the high school group, while the 0 to 8 educational level could well contain adults who may have a low level of general education, but who possess trade certification, or years of work experience.

FIGURE 35

UNEMPLOYMENT RATES BY EDUCATIONAL ATTAINMENT, ONTARIO, 1975–1983



4.0 SUMMARY OF MAJOR TRENDS

Data presented in this report clearly identify a number of major trends apparent in the Ontario labour market over recent years. These trends are:

- The increasing size, but decreasing rate of growth, of the total Ontario labour force;
- The rapidly growing share of the baby-boom generation aged 25-44 in the labour force and the beginning of a trend towards an older labour force;
- The increasing participation rates of females in the labour force, the increasing numbers of females in the labour force, and the increasing share of the labour force occupied by females;
- The increasing level of educational attainment of the labour force;
- The decreasing proportion of the labour force employed in goods-producing industries, and the increasing proportion of the labour force employed in service-related industries;
- The faster rate of growth of employment in service-related industries;
- The growth of employment in managerial, professional, clerical, service and sales occupations, particularly in service-related industries;
- The steady increase in the extent of part-time work, particularly in the service industries, most of it performed by women;
- The rising unemployment rates for all labour force participants;
- The continuing high unemployment rates of youth in spite of rising educational attainment.

APPENDIX A
LABOUR FORCE DATA, BY SEX BY INDUSTRY

Appendix A shows the changing number of males and females employed in different industries. The data show different trends for particular industries.

In the primary industries, the absolute numbers of males have steadily declined over the 1951-81 period, whereas the numbers of females have steadily increased; the proportion of females employed in the primary industries has therefore risen sharply.

In the manufacturing industries, the numbers of both males and females have increased over the 1951-81 period, with females increasing at a faster rate.

In the construction industry, the numbers of both males and females have increased, but with growth of employment for males clearly outweighing growth in female employment.

In transportation and other utilities comparable growth has occurred for both males and females over the period 1951-81.

In the retail and wholesale trade industry, the growth of employment for females outpaced that for males, and the proportion of females employed in these industries is now substantially higher than in previous years.

In the service industries (including: personal, business and community services; finance, real estate and insurance; public administration), there has occurred substantial growth in the numbers of both males and females employed, but with a significantly faster rate of increase for females, and with the result that females now exceed the number of males employed in these industries.

Sources

Industry data for 1951 and 1961 are derived from 1961 Census, Table 4, p. 12-64. 1971 and 1981 industry data are derived from Statistics Canada Population (92-925), Table 1.

Definitions of industries are based on the Standard Industrial Classification Manual, 1970 edition. Each industry encompasses the following sub-groups:

PRIMARY

Agriculture
Forestry
Fishing and Trapping
Mines (including milling),
Quarries and Oil Wells

CONSTRUCTION

General Contractors
Special-Trade Contractors

TRANSPORTATION AND OTHER UTILITIES

Transportation
Storage
Communication
Electric Power, Gas and Water Utilities

TRADE

Wholesale Trade
Retail Trade

SERVICE

Note: on some graphs service
encompassess Finance and Public Administration

Education and Related Services
Health and Welfare Services
Religious Organizations
Amusement and Recreation Services
Services to Business Management
Personal Services
Accommodation and Food Services
Miscellaneous Services

MANUFACTURING

Food and Beverage Industries
Tobacco Products
Rubber and Plastics Products
Leather Industries
Textile Industries
Knitting Mills
Clothing Industries
Wood Industries
Furniture and Fixture Industries
Paper and Allied Industries
Printing, Publishing and Allied Industries
Primary Metal Industries
Metal Fabricating Industries
Machinery Industries
Transportation Equipment
Electrical Products
Non-Metallic Mineral Products
Petroleum and Coal Products
Chemical and Chemical Products
Miscellaneous Manufacturing

FINANCE

Finance Industries
Insurance Carriers
Insurance Agencies and Real Estate Industry

PUBLIC ADMINISTRATION AND DEFENSE

Federal Administration
Provincial Administration
Local Administration
Other Government Offices

Definitions of Occupations are based on the Canadian Classification and Dictionary of Occupations, 1971.

FIGURE A1

LABOUR FORCE BY SEX, ONTARIO, 1951–1981
PRIMARY INDUSTRIES

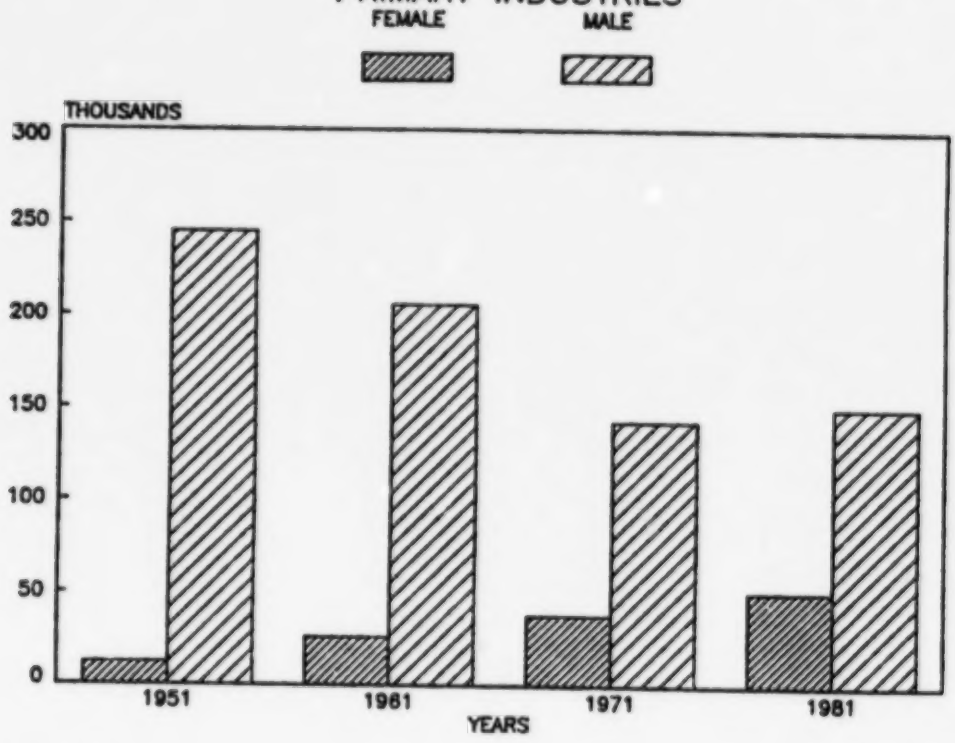


FIGURE A2

LABOUR FORCE BY SEX, ONTARIO, 1951–1981
MANUFACTURING

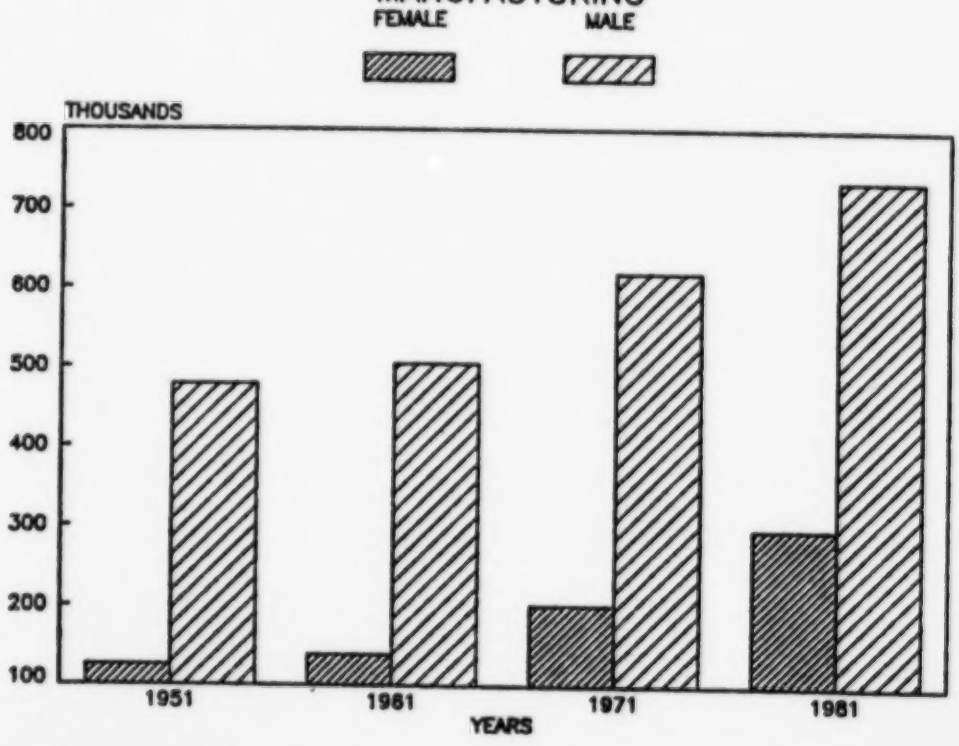


FIGURE A3

LABOUR FORCE BY SEX, ONTARIO, 1951–1981
CONSTRUCTION INDUSTRY

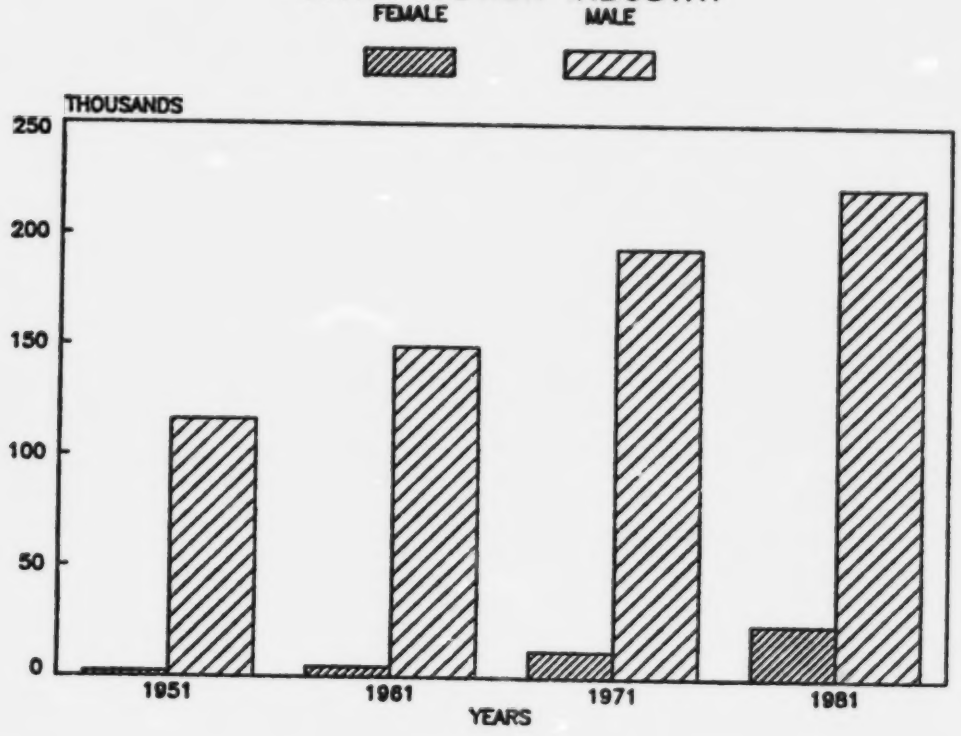


FIGURE A4

LABOUR FORCE BY SEX, ONTARIO, 1951–1981
TRANSPORTATION AND OTHER UTILITIES

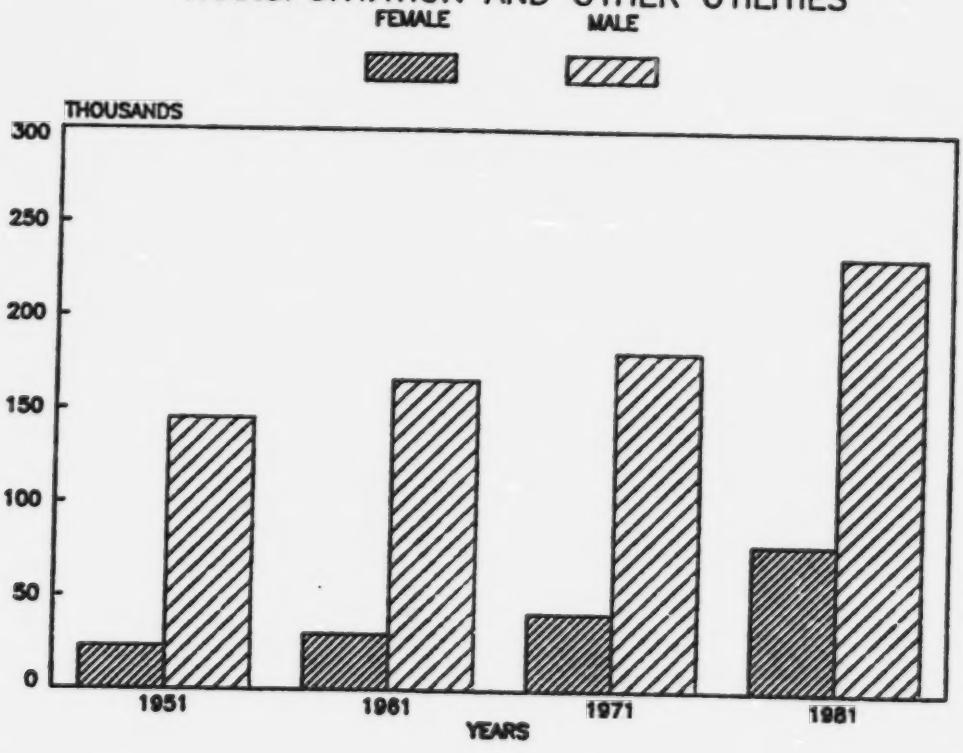


FIGURE A5

LABOUR FORCE BY SEX, ONTARIO, 1951–1981
TRADE

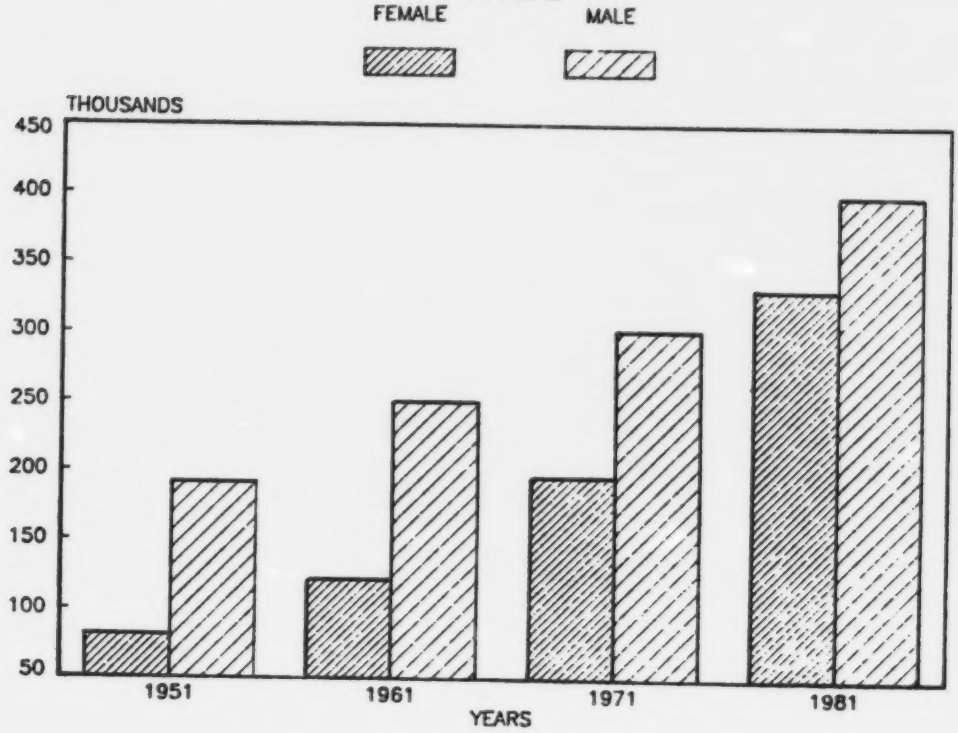
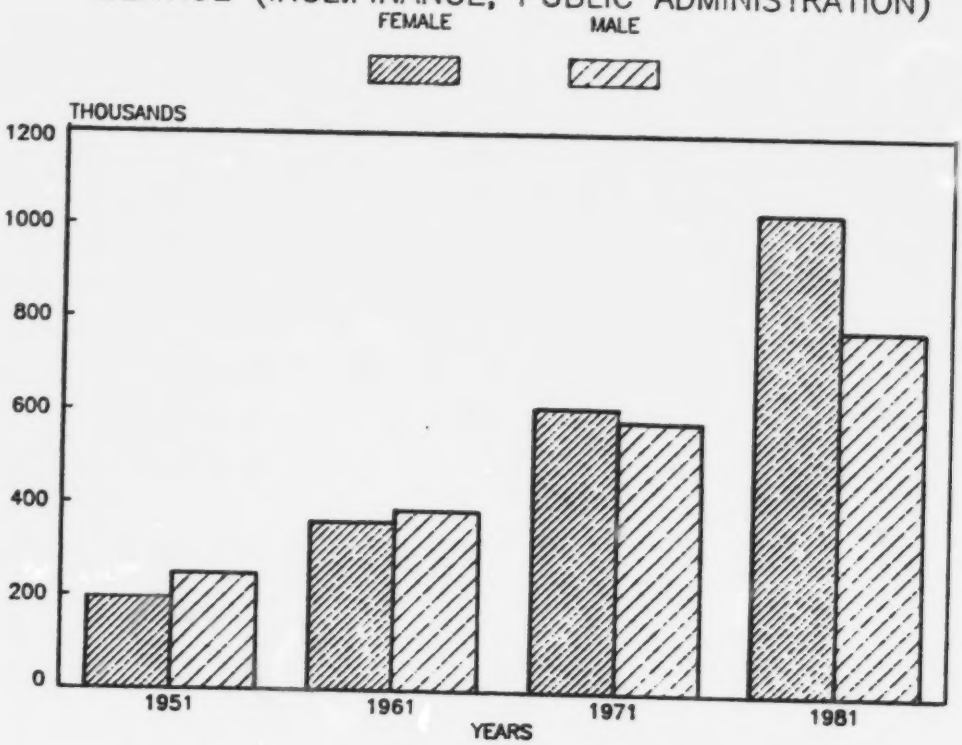


FIGURE A6

LABOUR FORCE BY SEX, ONTARIO, 1951–1981
SERVICE (INCL.FINANCE, PUBLIC ADMINISTRATION)



APPENDIX B
EMPLOYMENT AND OUTPUT TRENDS, 1961-1981, BY INDUSTRY

This appendix presents employment and output trends in the Ontario economy for the 1961-1983 period for Ontario and for twenty industry sectors. For Ontario overall, and for each component industry sector, employment indices are shown which track employment changes relative to an arbitrarily chosen base year of 1971. For purposes of perspective, output measures for the sectors over the same time period are also shown.

Data are presented for Ontario, and for the following component industry sectors: Primary Industries (including: Agriculture, Fishing and Trapping; Forestry; Mineral Fuel Mines and Wells; Other Mines and Quarries); Food, Feed, Beverage and Tobacco; Textile and Clothing; Wood and Furniture; Paper and Allied Industries; Primary Metal and Metal Fabricating; Motor Vehicles and Parts; Machinery and Other Transportation; Electrical Products; Chemical, Rubber, and Petroleum; Non-Metallic Mineral Products; Other Manufacturing Industries; Construction; Electric Power and Gas Utilities; Transportation and Storage; Communication; Trade; Finance, Insurance and Real Estate; Communities, Business and Personal Services; Public Administration.

Data Sources

Data were obtained from the Conference Board of Canada's data base. (Statistics Canada does not publish Gross Provincial Product Figures. The Conference Board uses national figures to estimate provincial data.) Gross domestic product is calculated to reflect total factor income in all sectors. In the goods-producing sectors this is a value-added concept, meaning that the market value of output, minus the market value of all intermediate goods used to produce this output, represents the total income going to wages and salaries, depreciation or capital, and profits. The measure is more difficult to obtain in the services sector, though the definition is identical. Of note, the meaning of output in non-profit services, such as public administration or education, thus refers to wages and salaries plus depreciation of capital. Given that these industries are very labour-intensive, the notion of real domestic product is therefore highly correlated with real wages and salaries. This accounts for the close association between the output and employment trend lines for most services.

Employment data were obtained from a number of different sources. The primary source of data is the Labour Force Survey (Statistics Canada Catalogue 71-001). The Census of Manufacturers (Catalogue 31-203) and the 1971 general Census were also used. Employment data for manufacturing industry sectors are given for

1961-83, whereas for other sectors data are given for the period 1966-83. Note: The data presented, particularly that of output in the service industries, do not provide a sufficient basis for a meaningful analysis of labour productivity, despite the fact that differences in these trends, and the respective time rates of change of output per unit of employment, are frequently used as a first approximation of the same. The brief discussion presented here makes no attempt to utilize the data as indicators of labour productivity, but simply as a time series of data illustrating trends experienced by different industry sectors.

Comments on Selected Charts

The chart for the Ontario economy suggests that output has been growing for the early part of the 1961-81 period at a faster rate than employment. In the latter part of the time period this does not apear to be the case, perhaps reflecting the long-term proportional shift of the economy toward service activities. The primary industries display more volatility than long-term growth of output, especially over the 1968-77 period. Since 1961 the overall trend is one of modest increase in output. The employment trend is much less volatile and indicates a virtual constancy in the size of the work force from 1966 to 1983.

For the manufacturing industries in general, over a significant period of time output has grown at a more rapid rate than employment. For many component manufacturing sectors slightly differing trends are evident, but in general long-run trends for output and employment were more stable in the 1960s and early 70s.

Employment in the construction sector seems to be marked by a relatively stable size of labour force from 1966 to 1972, expansion until 1975, and subsequent slow but steady reductions of the work force until 1983. Though the output pattern appears to be related, with a time lag, to the business cycle, it seems to be considerably less volatile than many goods-producing sectors.

The Communication sector indicates output increasing at a much more rapid pace than employment throughout 1971-83.

In general, with all service-related industries there is a close relationship between output and employment, as is to be expected from the nature of the output data presented. The public administration sector appears to display different characteristics than other service sectors. In almost all of these sectors there has occurred steady employment growth, with little of the volatility apparent in the goods-producing sectors.

FIGURE B1

OUTPUT AND EMPLOYMENT, ONTARIO

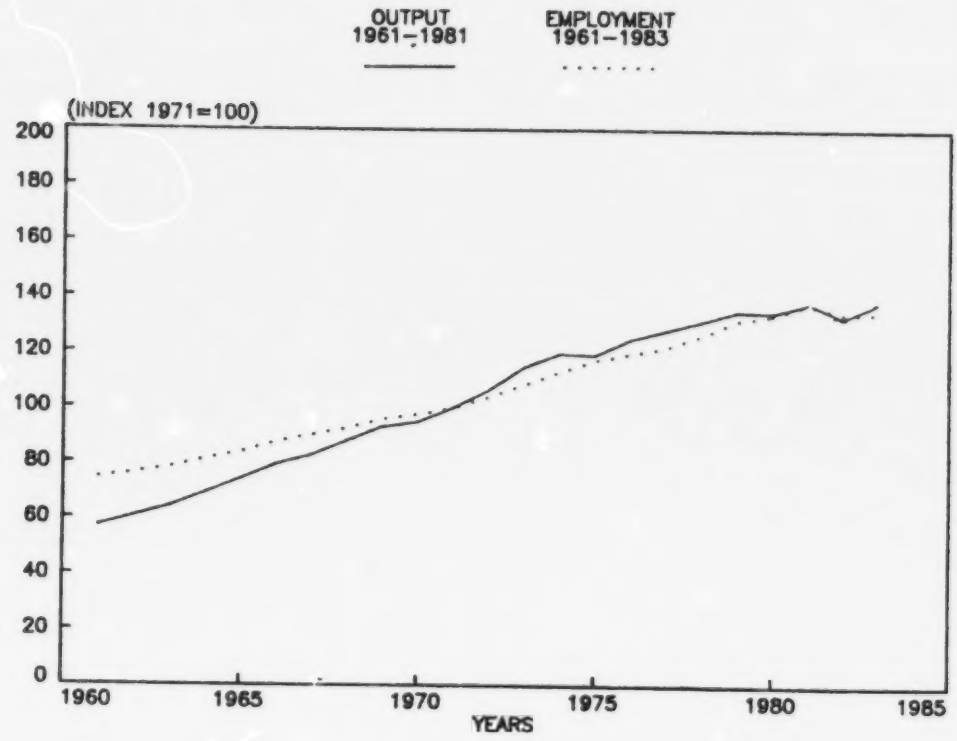


FIGURE B2

OUTPUT AND EMPLOYMENT, ONTARIO PRIMARY INDUSTRIES

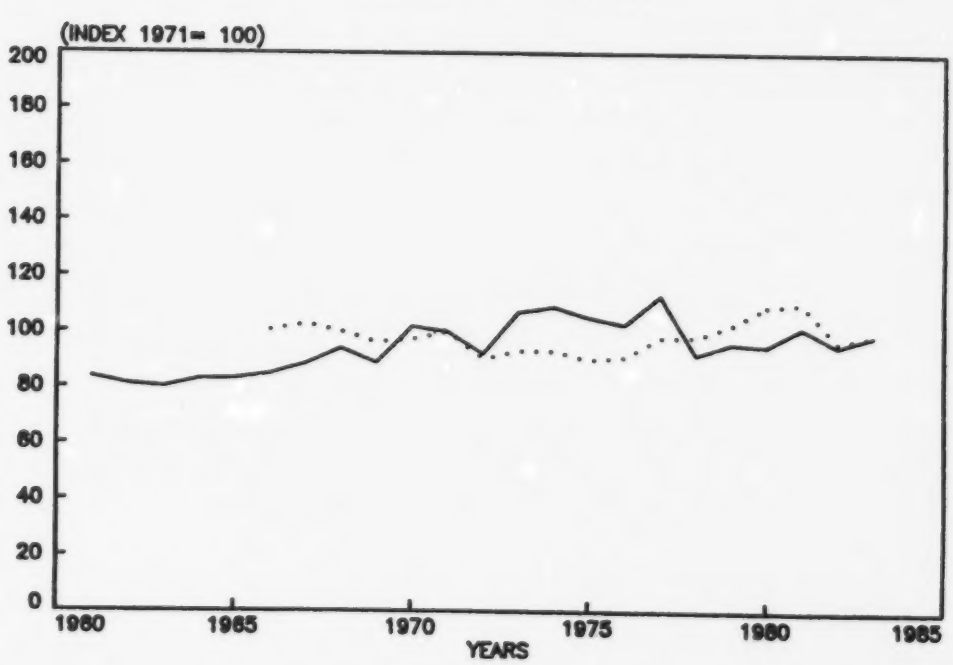


FIGURE B3

OUTPUT AND EMPLOYMENT, ONTARIO FOOD, FEED, BEVERAGE AND TOBACCO

OUTPUT 1961–1983 ——— EMPLOYMENT 1961–1983 .....

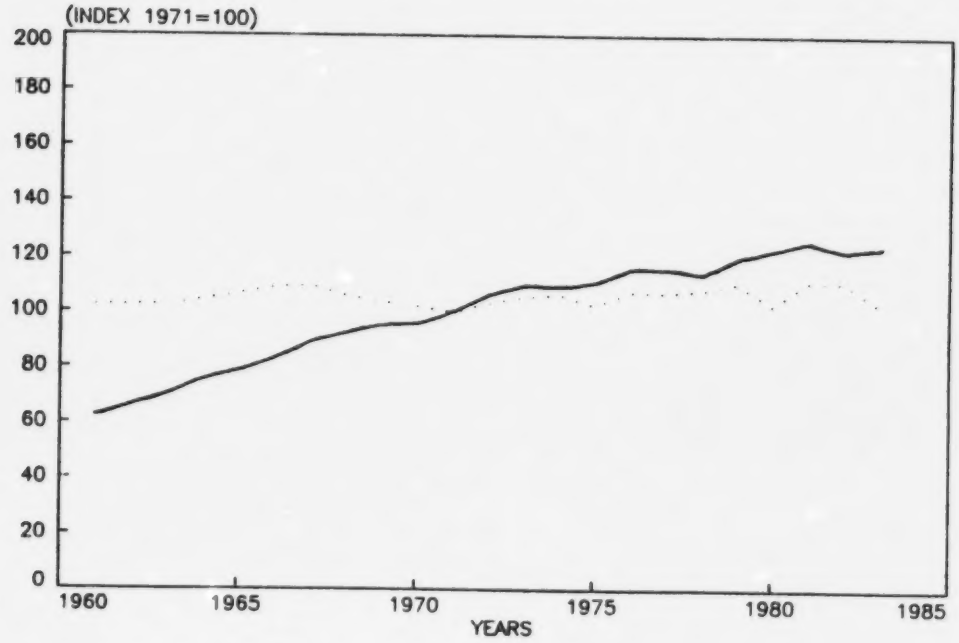


FIGURE B4

OUTPUT AND EMPLOYMENT, ONTARIO TEXTILES AND CLOTHING

OUTPUT 1961–1983 ——— EMPLOYMENT 1961–1983 .....

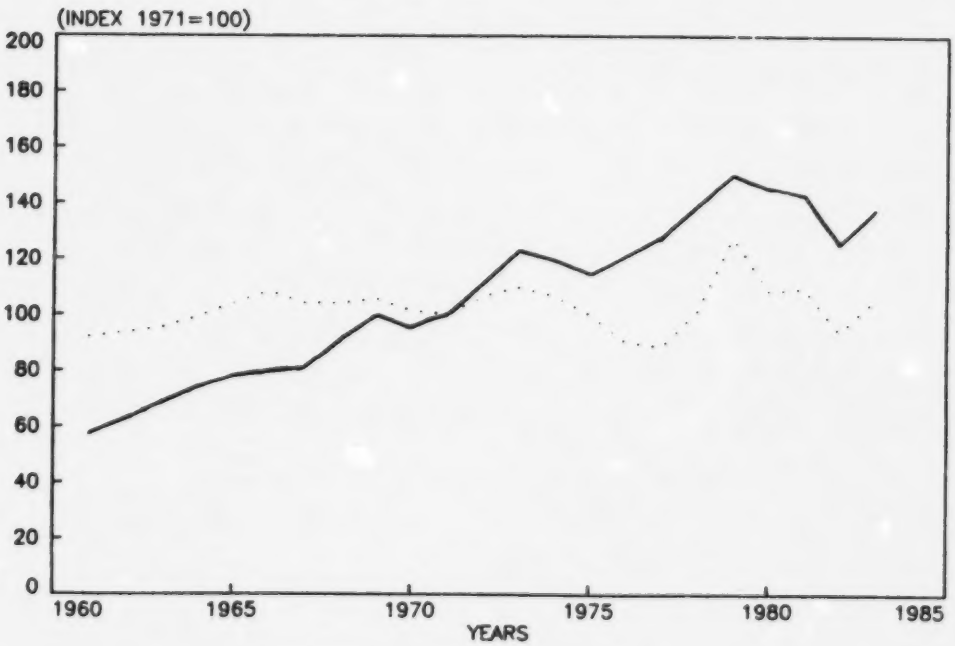


FIGURE B5

OUTPUT AND EMPLOYMENT, ONTARIO
WOOD AND FURNITURE

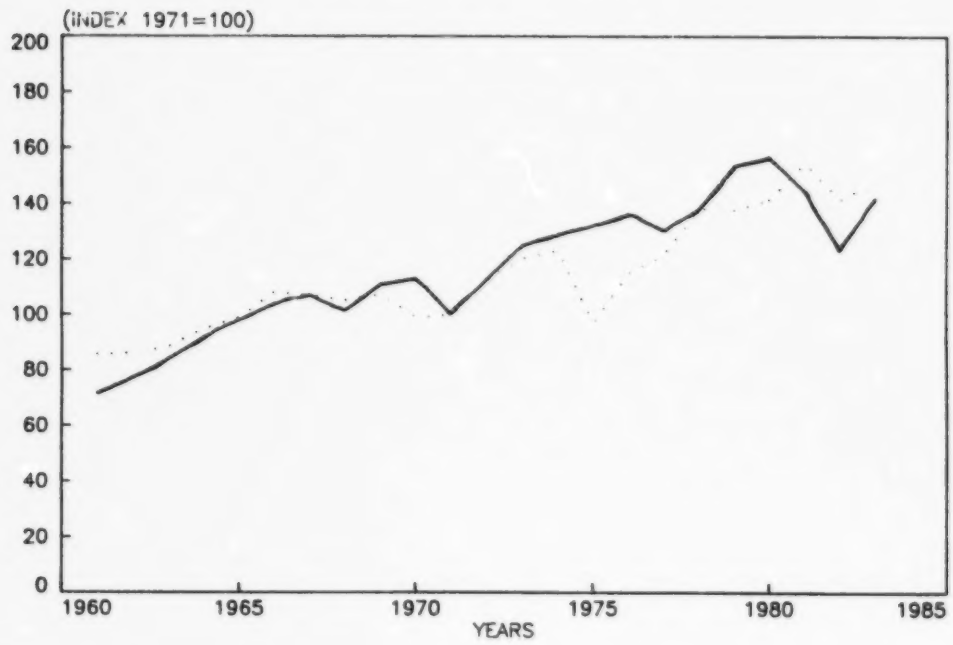


FIGURE B6

OUTPUT AND EMPLOYMENT, ONTARIO
PAPER, PRINTING AND ALLIED INDUSTRIES

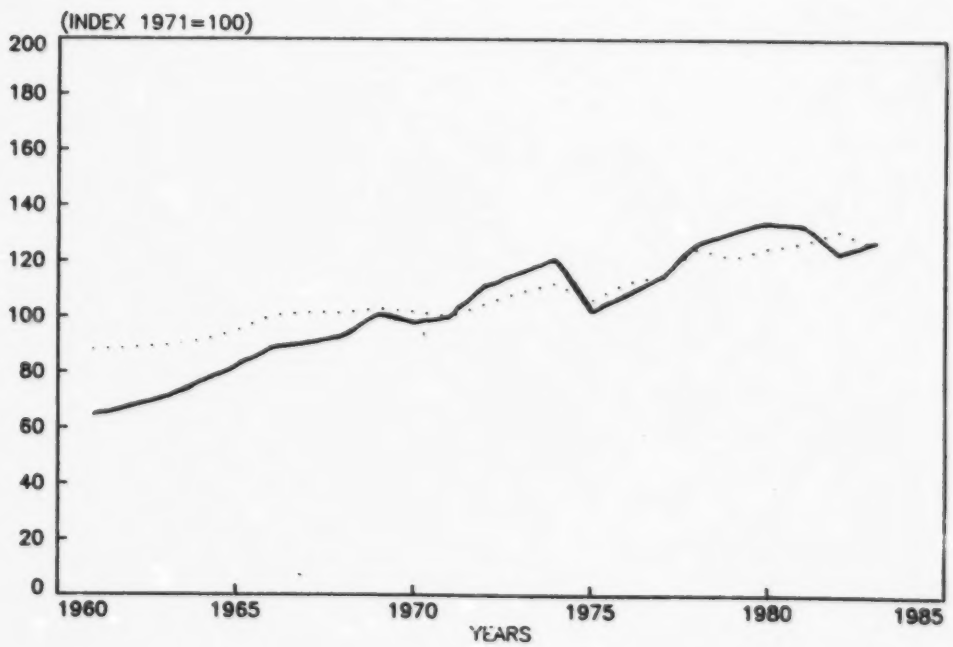


FIGURE B7

OUTPUT AND EMPLOYMENT, ONTARIO
PRIMARY METAL AND METAL FABRICATING

OUTPUT 1961–1983 ——— EMPLOYMENT 1961–1983 .....

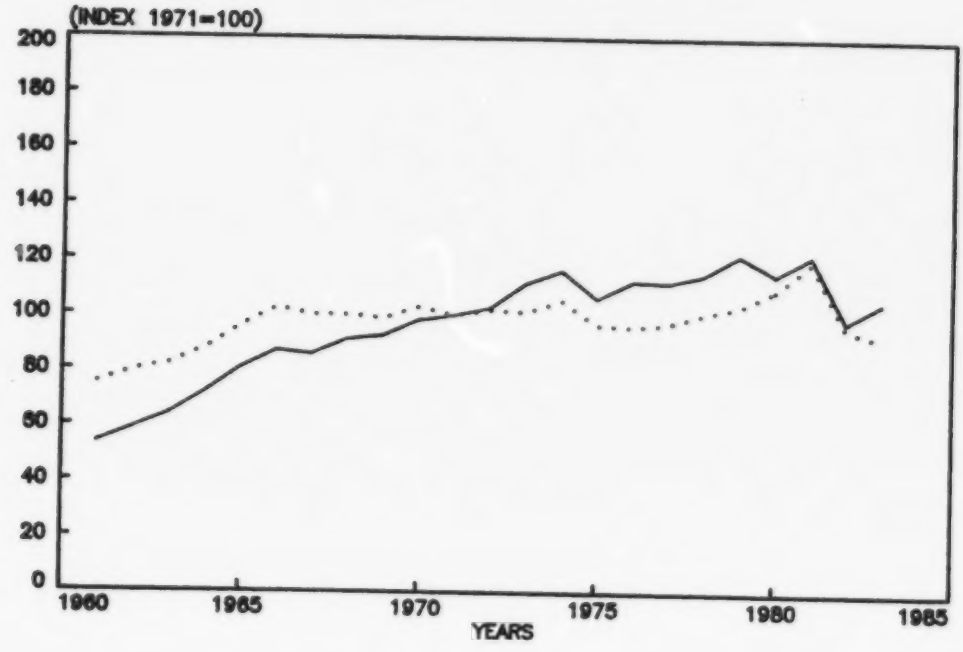


FIGURE B8

OUTPUT AND EMPLOYMENT, ONTARIO
MOTOR VEHICLES AND PARTS

OUTPUT 1961–1983 ——— EMPLOYMENT 1961–1983 .....

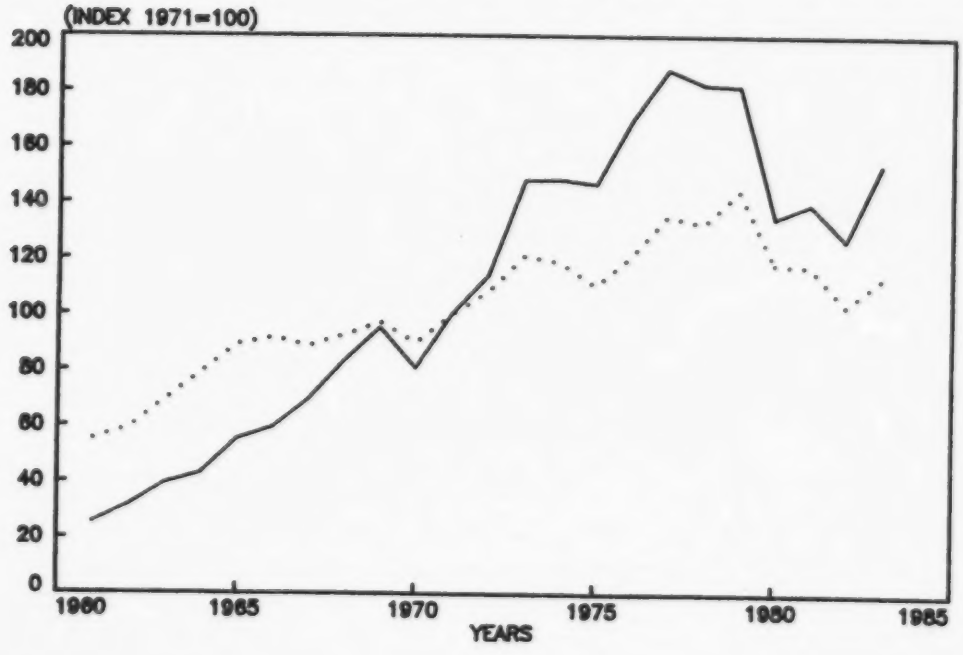


FIGURE B9

OUTPUT AND EMPLOYMENT, ONTARIO
MACHINERY AND OTHER TRANSPORTATION EQUIPMENT

OUTPUT 1961–1983 ——— EMPLOYMENT 1961–1983 .....

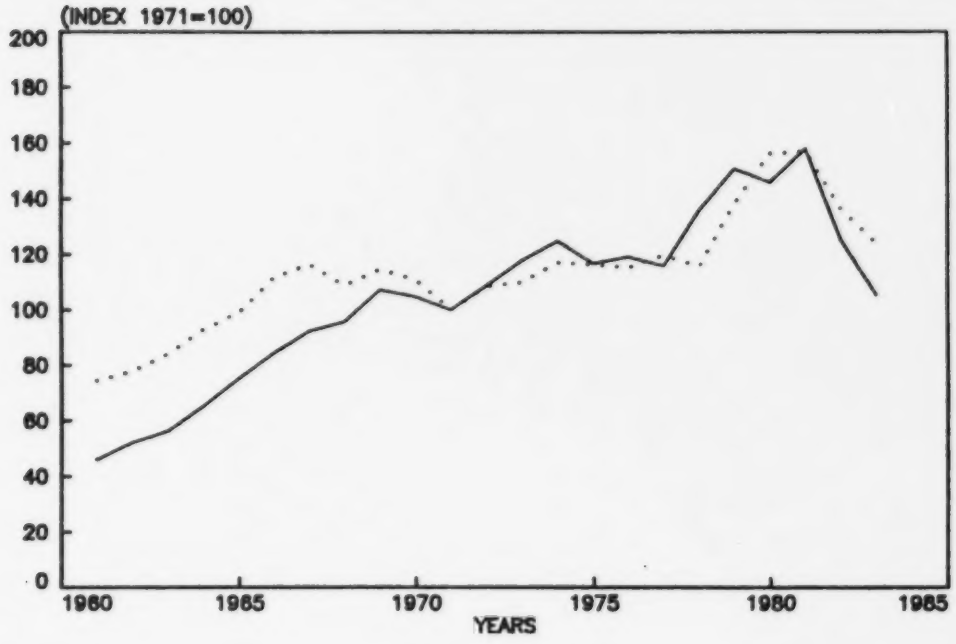


FIGURE B10

OUTPUT AND EMPLOYMENT, ONTARIO
ELECTRICAL PRODUCTS

OUTPUT 1961–1983 ——— EMPLOYMENT 1961–1983 .....

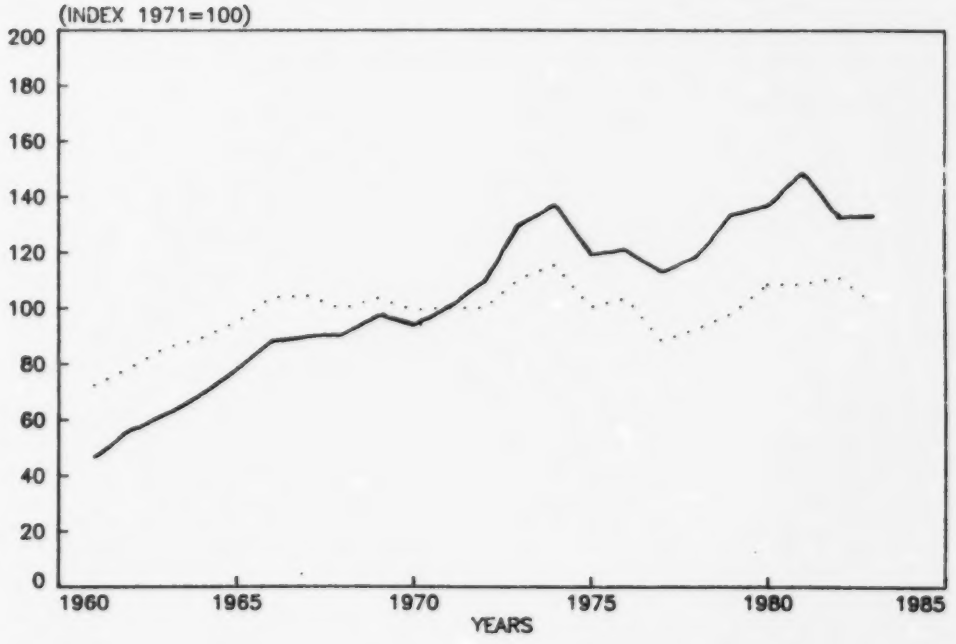


FIGURE B11

OUTPUT AND EMPLOYMENT, ONTARIO CHEMICALS, RUBBER AND PETROLEUM

OUTPUT 1961–1983 ——— EMPLOYMENT 1961–1983 .....

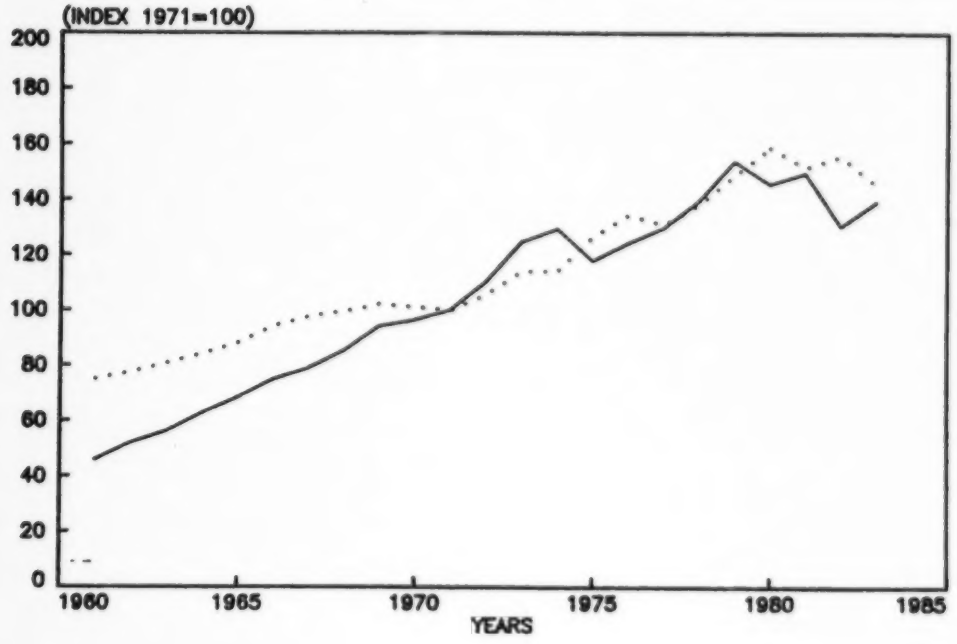


FIGURE B12

OUTPUT AND EMPLOYMENT, ONTARIO NON–METALLIC MINERAL PRODUCTS

OUTPUT 1961–1983 ——— EMPLOYMENT 1961–1983 .....

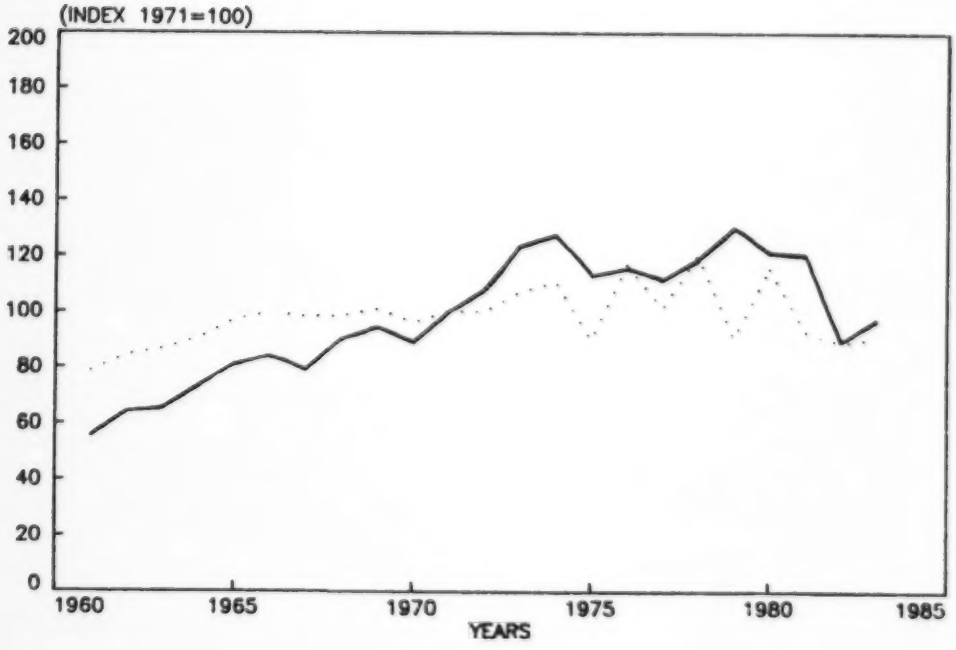


FIGURE B13

OUTPUT AND EMPLOYMENT, ONTARIO OTHER MANUFACTURING INDUSTRIES

OUTPUT 1961–1983 ——— EMPLOYMENT 1961–1983 .....

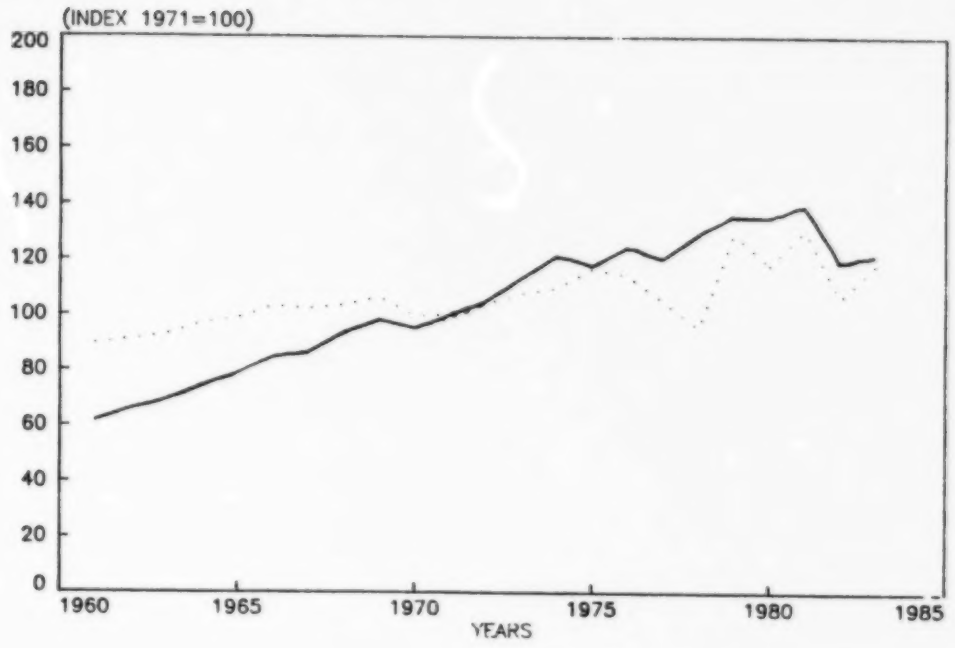


FIGURE B14

OUTPUT AND EMPLOYMENT, ONTARIO CONSTRUCTION

OUTPUT 1961–1983 ——— EMPLOYMENT 1966–1983 .....

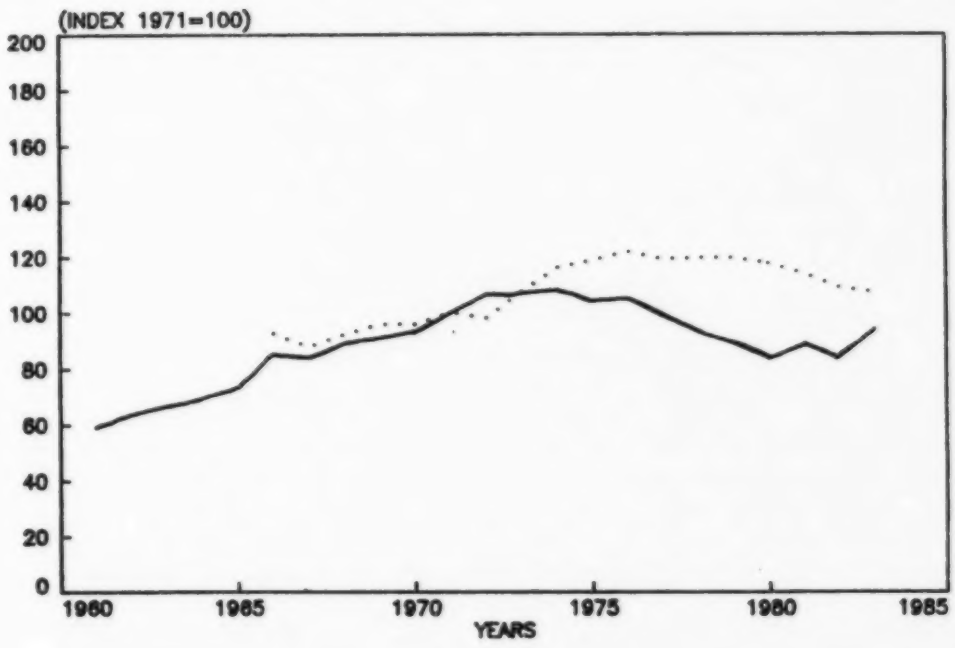


FIGURE B15

OUTPUT AND EMPLOYMENT, ONTARIO
ELECTRIC POWER AND GAS UTILITIES

OUTPUT 1961–1983 ——— EMPLOYMENT 1971–1983 .....

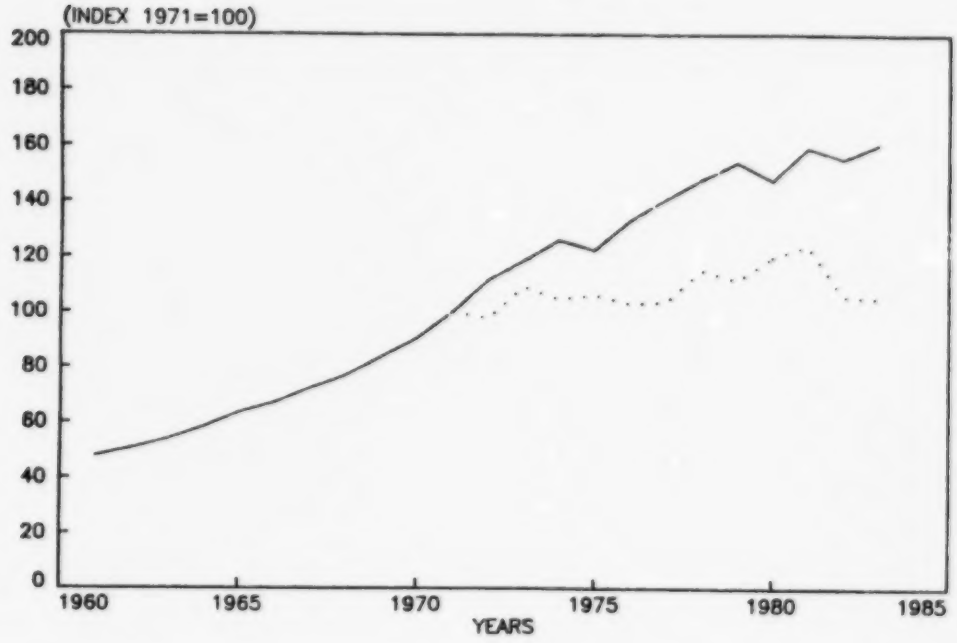


FIGURE B16

OUTPUT AND EMPLOYMENT, ONTARIO
TRANSPORTATION AND STORAGE

OUTPUT 1961–1983 ——— EMPLOYMENT 1971–1983 .....

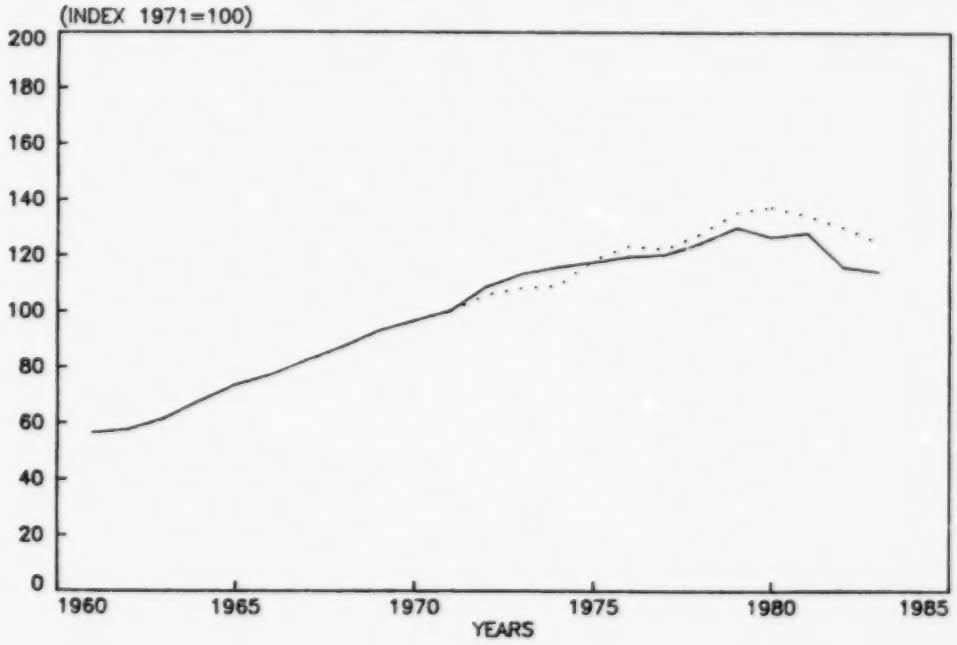


FIGURE B17

OUTPUT AND EMPLOYMENT, ONTARIO
COMMUNICATION

OUTPUT 1961–1983 ——— EMPLOYMENT 1971–1983 .....

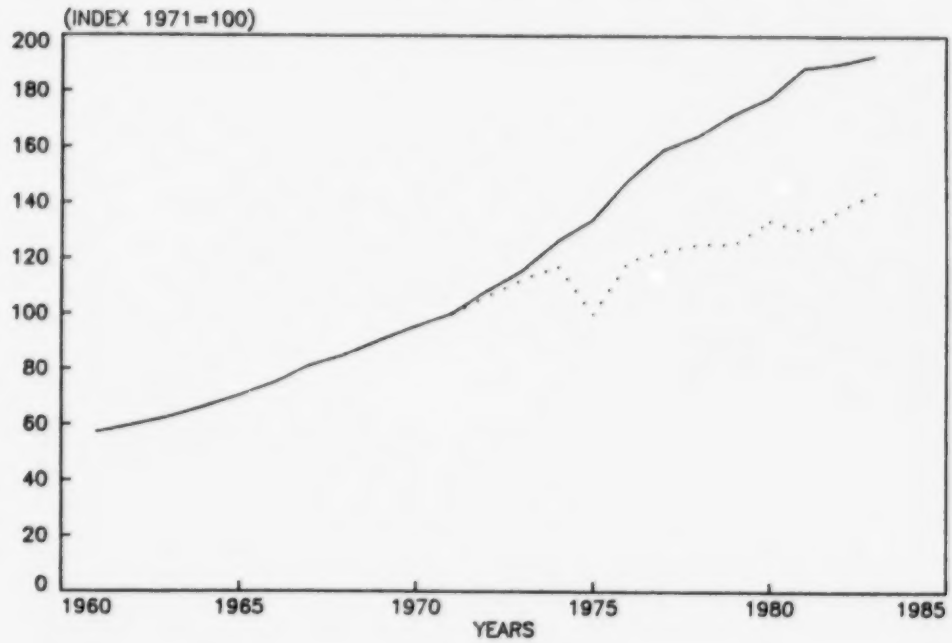


FIGURE B18

OUTPUT AND EMPLOYMENT, ONTARIO
TRADE

OUTPUT 1961–1983 ——— EMPLOYMENT 1966–1983 .....

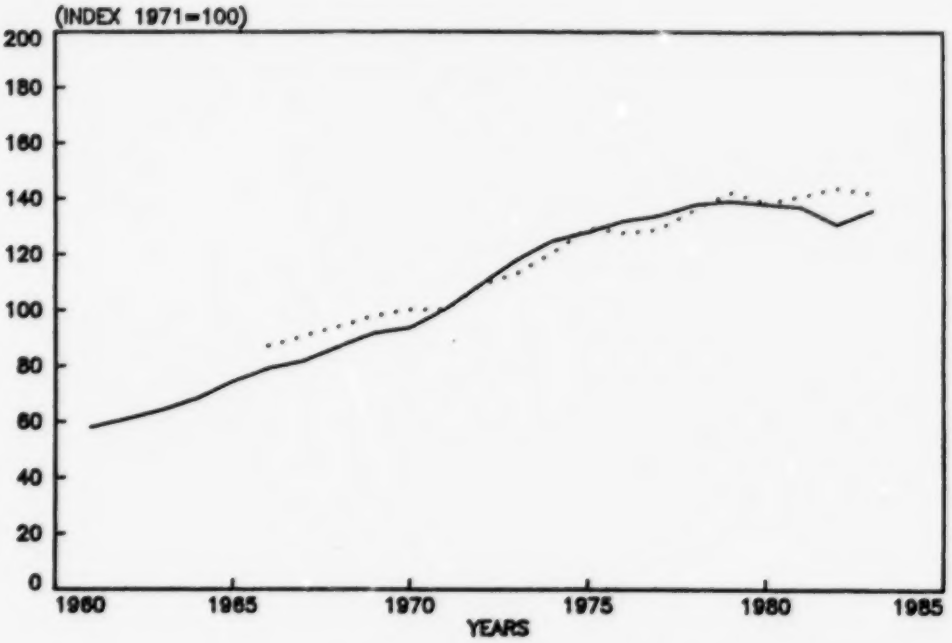


FIGURE B19

OUTPUT AND EMPLOYMENT, ONTARIO FINANCE, INSURANCE AND REAL ESTATE

OUTPUT 1961–1983 ——— EMPLOYMENT 1966–1983 .....

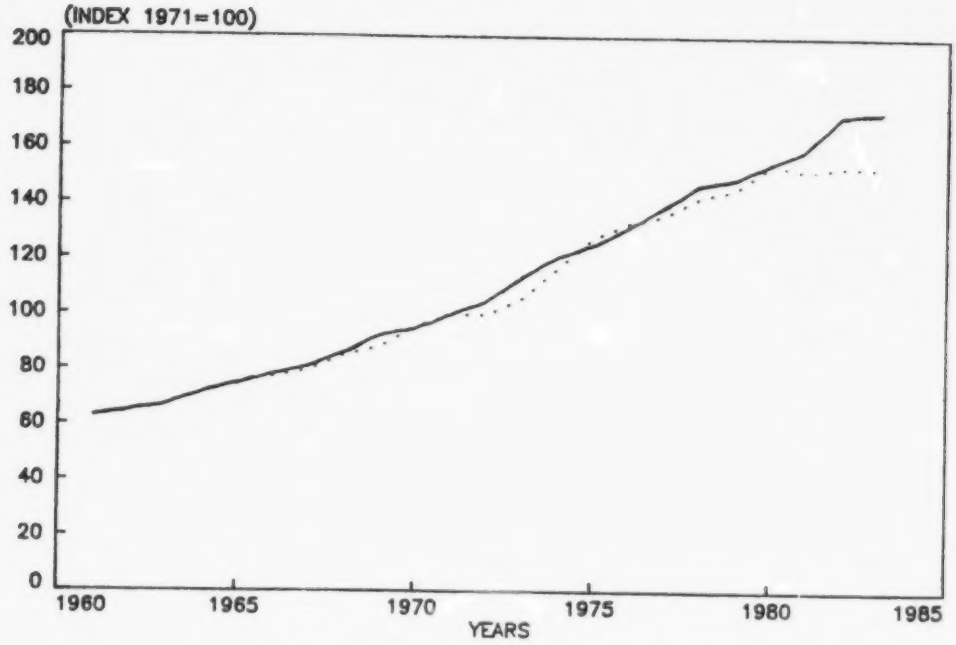


FIGURE B20

OUTPUT AND EMPLOYMENT, ONTARIO COMMUNITIES, BUSINESS, AND PERSONAL SERVICES

OUTPUT 1961–1983 ——— EMPLOYMENT 1966–1983 .....

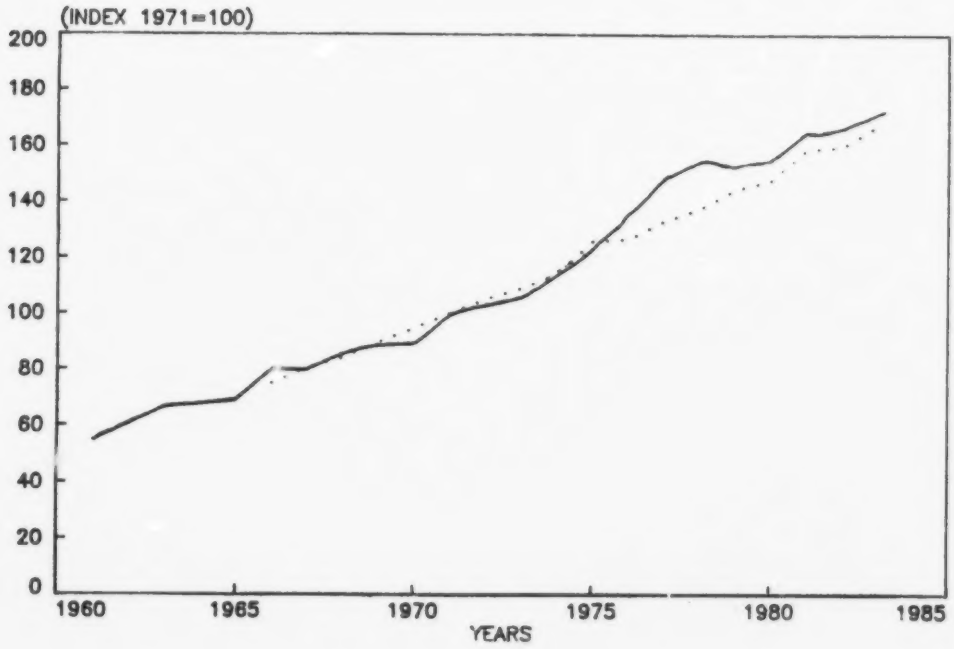
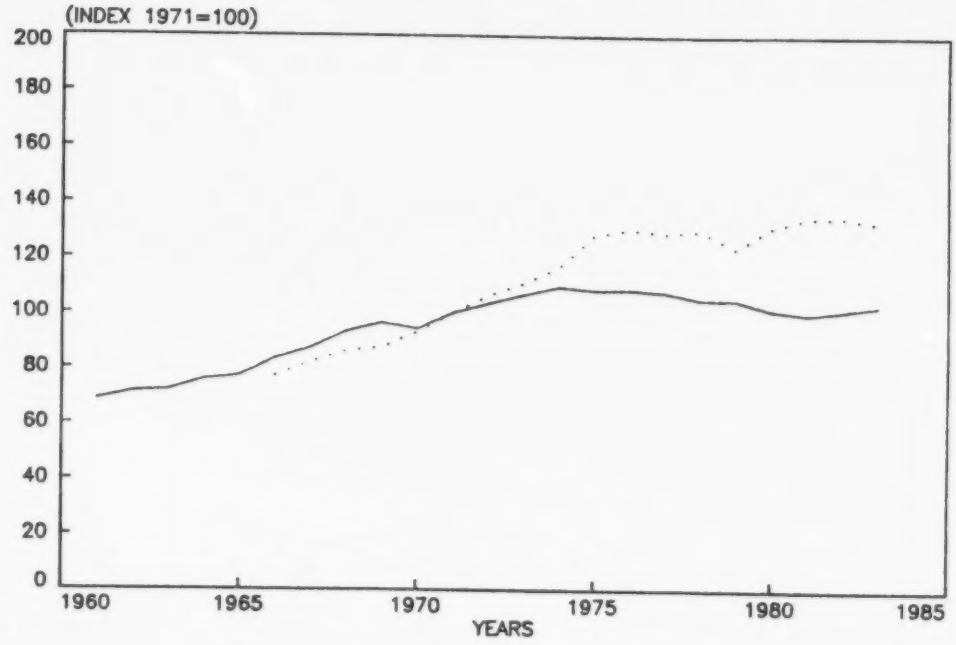


FIGURE B21

OUTPUT AND EMPLOYMENT, ONTARIO
PUBLIC ADMINISTRATION

OUTPUT 1961–1983 ——— EMPLOYMENT 1966–1983 .....



APPENDIX C
DATA SOURCES FOR FIGURES 1-35

The statistical information contained in the text of this report was derived primarily from Statistics Canada's Census and Labour Force Survey publications, as well as some other sources noted below. The relevant catalogue number or title of the source publication has been indicated for each figure.

Where labour force data is provided for years prior to 1966, the minimum age for inclusion in the labour force is 14. After 1966, the minimum age is 15. It should also be noted that totals do not always equal the sum of components due to rounding. Other notes and definitions affecting the data can be found in the source publications listed below.

List of figures and their data sources:

FIGURE	FIGURE TITLE
1	POPULATION OF ONTARIO, 1941-1983 Statistics Canada, 91-202
2	POPULATION BY AGE, ONTARIO, 1955-1983 Statistics Canada, 91-202
3	LABOUR FORCE OF ONTARIO, 1951-1983 Statistics Canada, 71-529, p. 144-152, and Ontario Statistics 1982, Table 11.6
4	LABOUR FORCE BY AGE, ONTARIO, 1951-1983 Statistics Canada, 71-529, Table 12, and Ontario Statistics 1982, Table 11.1
5	PARTICIPATION RATES BY AGE, ONTARIO, 1956-1983 Ontario Statistics 1982, Table 11.5 and Statistics Canada, 71-529, p. 160-161
6	FEMALE PARTICIPATION RATES BY AGE, ONTARIO, 1966-1983 Statistics Canada, unpublished data
7	MALE PARTICIPATION RATES BY AGE, ONTARIO, 1966-1983 Statistics Canada, unpublished data

8 LABOUR FORCE BY SEX, ONTARIO, 1951-1983
Statistics Canada, 71-529, Table 12 and
Ontario Statistics 1982, Table 11.6

9 PERCENTAGE DISTRIBUTION OF MALES AND FEMALES IN THE LABOUR FORCE, ONTARIO, 1951-1981
Statistics Canada, 71-529, p. 144-152
Ontario Statistics 1982, Table 11.6

10 PARTICIPATION RATES BY SEX, ONTARIO, 1953-1983
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Statistics Canada, 71-201

11 COMPARISON OF HIGHEST LEVEL OF SCHOOLING FOR POPULATION, ONTARIO, 1960 and 1981
Statistics Canada, 92-914, Table 3, and Statistics Canada, 71-505

12 HIGHEST LEVEL OF SCHOOLING FOR POPULATION 15 YEARS AND OVER, BY SEX, ONTARIO, 1981
Statistics Canada, 92-914, Table 3

13 COMPARISON OF HIGHEST LEVEL OF SCHOOLING FOR LABOUR FORCE, ONTARIO, 1960 and 1983
Statistics Canada, 71-529, Table 8

14 HIGHEST LEVEL OF SCHOOLING FOR LABOUR FORCE, ONTARIO, 1983, (Detailed Breakdown)
Statistics Canada, 71-529, Table 8

15 PARTICIPATION RATES BY EDUCATIONAL ATTAINMENT, ONTARIO, 1975-1983
Statistics Canada, 71-529, Table 8

16 HIGHEST LEVEL OF SCHOOLING FOR POPULATION 15 YEARS AND OVER BY AGE GROUPS, ONTARIO, 1981
Statistics Canada, 92-914, Table 3

17 LABOUR FORCE BY INDUSTRY, ONTARIO, 1951-1981
1961 Census, Table 4, p. 12-64, and
Statistics Canada, 92-925, Table 1

18 PERCENTAGE DISTRIBUTION OF THE LABOUR FORCE BY INDUSTRY, ONTARIO, 1951-1981
1961 Census, Table 4, p. 12-64 and
Statistics Canada, 92-925, Table 1

19 LABOUR FORCE BY OCCUPATION, ONTARIO, 1951-1971
Statistics Canada, 94-716, Table 1

20 LABOUR FORCE BY OCCUPATION, ONTARIO, 1975, 1979 AND 1983
Statistics Canada, 71-529, Table 16

21 PERCENTAGE DISTRIBUTION OF LABOUR FORCE BY OCCUPATION, ONTARIO, 1951, 1961 AND 1971
Statistics Canada, 94-716, Table 1

22 PERCENTAGE DISTRIBUTION OF LABOUR FORCE BY OCCUPATION, ONTARIO, 1975, 1979 AND 1983
Statistics Canada, 71-529, Table 16

23 PERCENT OF MALES AND FEMALES IN THE LABOUR FORCE BY OCCUPATION, ONTARIO, 1975
Statistics Canada, 71-529, Table 16

24 PERCENT OF MALES AND FEMALES IN THE LABOUR FORCE BY OCCUPATION, ONTARIO, 1983
Statistics Canada, 71-529, Table 16

25 USUAL HOURS WORKED BY INDUSTRY, CANADA, 1983
Statistics Canada, 71-529, Table 26

26 PART-TIME EMPLOYMENT BY SEX, ONTARIO, 1975-1983
Statistics Canada, 71-529, Table 29

27 PART-TIME EMPLOYMENT BY INDUSTRY, CANADA, 1975, 1979 AND 1983
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28 PART-TIME EMPLOYMENT BY OCCUPATION, CANADA, 1975, 1979 AND 1983
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29 PART-TIME EMPLOYMENT BY SEX AND OCCUPATION, CANADA, 1983
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30 PART-TIME EMPLOYMENT BY AGE, ONTARIO, 1975-1983
Statistics Canada, 71-529, Table 29

31 PART-TIME EMPLOYMENT BY SEX AND AGE, ONTARIO, 1983
Statistics Canada, 71-529, Table 29

32 UNEMPLOYMENT RATES, ONTARIO, 1951-1983
Historical Statistics of Canada, 2nd edition, D491-497, and Statistics Canada, 71-201, p. 201

33 UNEMPLOYMENT RATES BY AGE, ONTARIO, 1957-1983
Statistics Canada, 71-529, Table 37, and Ontario Statistics 1982, Table 11.18

34 UNEMPLOYMENT RATES BY SEX, ONTARIO, 1957-1983
Statistics Canada, 71-529, Table 37, and Ontario Statistics 1982, Table 11.18

35 UNEMPLOYMENT RATES BY EDUCATIONAL ATTAINMENT, ONTARIO, 1975-1983
Statistics Canada, 71-529, Table 8

FOOTNOTES

1. Department of Manpower and Immigration, Immigration and Population Statistics, 1974, p. 38.

2. D. K. Foot, Public Policy and Future Population in Ontario, Ontario Economic Council, 1979, p. 11.

3. D. K. Foot, Canada's Population Outlook: Demographic Futures and Economic Challenges, Ottawa, 1982, p. 191.

4. The Employment of Women in Ontario, Ontario Manpower Commission, 1983, p. 3.

5. Picot, G., The Changing Education Profile of Canadians, 1961-2000, Statistics Canada, 1980, p. 17-18.

6. Picot, op. cit., p. 15.

7. The Employment of Women, p. 5.

8. Statistics Canada, Education in Canada, a Statistical Review, 1984,p. 113.

9. Statistics Canada, Population: School Attendance and Level of Schooling, 1981 Census, p. 3-6, Table 3.

10. It should be noted that these percentages are approximate indications, since the classification systems for occupations and industries vary between census years and between the Census and the Labour Force Survey.

11. Gordon Vala-Webb, "Work Sharing and Job Creation," discussion paper for the Ministry of State for Economic and Regional Development, 1984, p. 5.

12. Labour Canada, Part-Time Work In Canada, report of the Commission of Inquiry into Part-time Work, 1983.

13. H. Martens, "Characteristics of Unemployed Youth in Ontario," Ontario Manpower Commission, 1982.

14. Employment and Immigration Canada, Labour Market Development in the 1980's, 1981, p. 11.

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FINAL REPORT AND APPENDICES OF THE ONTARIO TASK FORCE ON EMPLOYMENT AND NEW TECHNOLOGY

Final Report: **Employment and New Technology**

Appendices:

1. Labour Market Trends in Ontario, 1950-1980
2. Occupational Employment Trends in Ontario, 1971-1981
3. Emerging New Technology, 1985-1995: Framework for a Survey of Firms
4. Employment and New Technology in Ontario's Manufacturing Sector: A Summary of Selected Industries
5. Imployment and New Technology in the Iron and Steel Industry
6. Employment and New Technology in the Metal Fabricating Industry
7. Employment and New Technology in the Machinery and Equipment Industry
8. Employment and New Technology in the Aircraft and Aircraft Parts Industry
9. Employment and New Technology in the Communications Equipment Industry
10. Employment and New Technology in the Office, Store and Business Machine Industry
11. Employment and New Technology in the Plastic Processing Industry
12. Employment and New Technology in Ontario's Service Sector: A Summary of Selected Industries
13. Employment and New Technology in the Chartered Banks and Trust Industry
14. Employment and New Technology in the Insurance Industry
15. Employment and New Technology in the Government Services Industry
16. Employment and New Technology in the Telecommunications Industry
17. Employment and New Technology in the Retail Trade Industry
18. Employment and New Technology in the Computer Services and Management Consulting Industry
19. Industry-Sector and Occupational Employment in Ontario, 1985-1995
20. Technological Change, Productivity, and Employment: Studies of the Overall Economy